74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA
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FCC LTE REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

Address:
129, Samsung-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

Date of Issue:
January 04, 2022

Location:
HCT CO., LTD.,
74, Seoicheon-ro 578beon-gil, Majang-myeon,
Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA

Report No.: HCT-RF-2201-FC003

FCC ID:	**A3LSMA336M**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model(s):	SM-A336M/DSN
Additional Model(s):	SM-A336M
EUT Type:	Mobile phone
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§27, §2

Main1 Antenna

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band66/4 (1.4)	1710.7 – 1779.3	1M09G7D	QPSK	0.131	21.16
		1M10W7D	16QAM	0.122	20.85
		1M10W7D	64QAM	0.097	19.88
		1M11W7D	256QAM	0.048	16.85
LTE – Band66/4 (3)	1711.5 – 1778.5	2M73G7D	QPSK	0.130	21.14
		2M73W7D	16QAM	0.122	20.88
		2M72W7D	64QAM	0.099	19.94
		2M72W7D	256QAM	0.049	16.92
LTE – Band66/4 (5)	1712.5 – 1777.5	4M51G7D	QPSK	0.114	20.58
		4M52W7D	16QAM	0.103	20.12
		4M54W7D	64QAM	0.090	19.53
		4M53W7D	256QAM	0.049	16.93
LTE – Band66/4 (10)	1715.0 – 1775.0	9M02G7D	QPSK	0.122	20.86
		9M02W7D	16QAM	0.110	20.40
		9M06W7D	64QAM	0.097	19.87
		9M01W7D	256QAM	0.049	16.87
LTE – Band66/4 (15)	1717.5 – 1772.5	13M5G7D	QPSK	0.119	20.76
		13M4W7D	16QAM	0.103	20.12
		13M5W7D	64QAM	0.086	19.35
		13M4W7D	256QAM	0.047	16.74
LTE – Band66/4 (20)	1720.0 – 1770.0	17M9G7D	QPSK	0.120	20.79
		17M9W7D	16QAM	0.100	20.01
		17M9W7D	64QAM	0.084	19.23
		17M9W7D	256QAM	0.047	16.71

Sub2 Antenna

Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max. Power (W)	Max. Power (dBm)
LTE – Band66 (1.4)	1710.7 – 1779.3	1M11G7D	QPSK	0.064	18.06
		1M10W7D	16QAM	0.049	16.89
		1M12W7D	64QAM	0.040	15.98
		1M12W7D	256QAM	0.020	12.94
LTE – Band66 (3)	1711.5 – 1778.5	2M76G7D	QPSK	0.063	18.00
		2M78W7D	16QAM	0.052	17.12
		2M75W7D	64QAM	0.041	16.13
		2M79W7D	256QAM	0.021	13.14
LTE – Band66 (5)	1712.5 – 1777.5	4M52G7D	QPSK	0.063	17.97
		4M54W7D	16QAM	0.051	17.03
		4M53W7D	64QAM	0.040	15.99
		4M52W7D	256QAM	0.020	12.96
LTE – Band66 (10)	1715.0 – 1775.0	9M04G7D	QPSK	0.064	18.06
		9M01W7D	16QAM	0.050	17.00
		9M04W7D	64QAM	0.040	15.99
		9M02W7D	256QAM	0.020	13.01
LTE – Band66 (15)	1717.5 – 1772.5	13M5G7D	QPSK	0.062	17.89
		13M5W7D	16QAM	0.048	16.83
		13M5W7D	64QAM	0.038	15.82
		13M5W7D	256QAM	0.019	12.86
LTE – Band66 (20)	1720.0 – 1770.0	18M0G7D	QPSK	0.062	17.91
		17M9W7D	16QAM	0.049	16.91
		17M9W7D	64QAM	0.038	15.85
		17M9W7D	256QAM	0.020	12.92

The measurements shown in this report were made in accordance with the procedures specified in CFR47 section §2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.
HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S. C.853(a)

REVIEWED BY

Report prepared by : Jae Mun Do
Engineer of Telecommunication Testing Center

Report approved by : Jong Seok Lee
Manager of Telecommunication Testing Center

This test results were applied only to the test methods required by the standard.

This laboratory is not accredited for the test results marked *.
The above Test Report is the accredited test result by (KS Q) ISO/IEC 17025 and KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA. (HCT Accreditation No.: KT197)

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2201-FC003	January 04, 2022	- First Approval Report

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.

Table of Contents

MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	SAMSUNG Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID:	A3LSMA336M
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§27, §2
EUT Type:	Mobile phone
Model(s):	SM-A336M/DSN
Additional Model(s):	SM-A336M
Tx Frequency:	1710.7 MHz – 1779.3 MHz (LTE – Band 66/4 (1.4 MHz)) 1711.5 MHz – 1778.5 MHz (LTE – Band 66/4 (3 MHz)) 1712.5 MHz – 1777.5 MHz (LTE – Band 66/4 (5 MHz)) 1715.0 MHz – 1775.0 MHz (LTE – Band 66/4 (10 MHz)) 1717.5 MHz – 1772.5 MHz (LTE – Band 66/4 (15 MHz)) 1720.0 MHz – 1770.0 MHz (LTE – Band 66/4 (20 MHz))
Date(s) of Tests:	November 30, 2021 ~ December 28, 2021
Serial number:	Radiated: R3CRA0TXB9M (Sub2 Ant), R3CRA0TXAKE (Main1 Ant) Conducted: R3CRA0TY84R (Sub2 Ant), R3CRA0CJCGV (Main1 Ant)

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

The EUT was a Mobile Phone with GSM/GPRS/EGPRS/UMTS and LTE, Sub6.

It also supports IEEE 802.11 a/b/g/n/ac (20/40/80), Bluetooth, BT LE, NFC.

2.2. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

2.3. TEST FACILITY

The Fully-anechoic chamber and conducted measurement facility used to collect the radiated data are located at the **74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA.**

3. DESCRIPTION OF TESTS

3.1 TEST PROCEDURE

Test Description	Test Procedure Used
Occupied Bandwidth	- KDB 971168 D01 v03r01 – Section 4.3 - ANSI C63.26-2015 – Section 5.4.4
Band Edge	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Spurious and Harmonic Emissions at Antenna Terminal	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Conducted Output Power	- N/A (See SAR Report)
Peak- to- Average Ratio	- KDB 971168 D01 v03r01 – Section 5.7 - ANSI C63.26-2015 – Section 5.2.3.4 - ANSI C63.26-2015 – Section 5.2.6(only GSM)
Frequency stability	- ANSI C63.26-2015 – Section 5.6
Effective Radiated Power/ Effective Isotropic Radiated Power	- KDB 971168 D01 v03r01 – Section 5.2 & 5.8 - ANSI/TIA-603-E-2016 – Section 2.2.17
Radiated Spurious and Harmonic Emissions	- KDB 971168 D01 v03r01 – Section 6.2 - ANSI/TIA-603-E-2016 – Section 2.2.12

3.2 RADIATED POWER

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

The equipment under test is placed on a non-conductive table 3-meters away from the receive antenna in accordance with ANSI/TIA-603-E-2016 Clause 2.2.17.

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5 % of the expected OBW, not to exceed 1 MHz
3. VBW ≥ 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points > 2 x span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

Test Note

1. The turntable is rotated through 360 degrees, and the receiving antenna scans in order to determine the level of the maximized emission.
2. A half wave dipole is then substituted in place of the EUT. For emissions above 1 GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated.

   The power is calculated by the following formula;

   $$P_{d\ (dBm)} = Pg_{\ (dBm)} - \text{cable loss}_{\ (dB)} + \text{antenna gain}_{\ (dB)}$$

   Where: P_d is the dipole equivalent power and P_g is the generator output power into the substitution antenna.
3. The maximum value is calculated by adding the forward power to the calibrated source plus its appropriate gain value. These steps are repeated with the receiving antenna in both vertical and horizontal polarization. the difference between the gain of the horn and an isotropic antenna are taken into consideration
4. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
5. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

3.3 RADIATED SPURIOUS EMISSIONS

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA-603-E-2016.

Test Settings

1. RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz
2. VBW ≥ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points > 2 x span / RBW
5. Detector = Peak
6. Trace mode = Max Hold
7. The trace was allowed to stabilize
8. Test channel : Low/ Middle/ High
9. Frequency range : We are performed all frequency to 10^{th} harmonics from 9 kHz.

Test Note

1. Measurements value show only up to 3 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
2. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the test data
3. For spurious emissions above 1 GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated.
   The spurious emissions is calculated by the following formula;

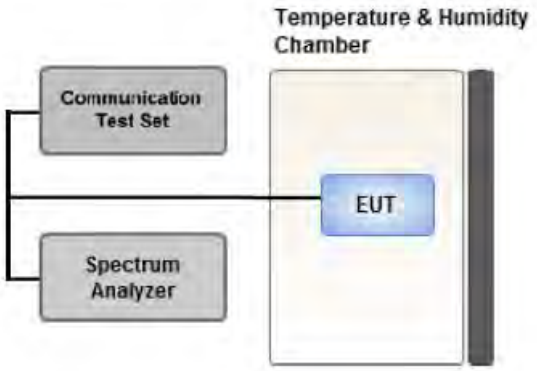
$$\text{Result}_{(dBm)} = \text{Pg}_{(dBm)} - \text{cable loss}_{(dB)} + \text{antenna gain}_{(dBi)}$$

   Where: $P_g$is the generator output power into the substitution antenna.

   If the fundamental frequency is below 1 GHz, RF output power has been converted to EIRP.

$$\text{EIRP}_{(dBm)} = \text{ERP}_{(dBm)} + 2.15$$

3.4 PEAK- TO- AVERAGE RATIO



Test setup

① CCDF Procedure for PAPR

Test Settings

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Set the measurement interval as follows:

.- for continuous transmissions, set to 1 ms,

.- or burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.

4. Record the maximum PAPR level associated with a probability of 0.1 %.

② **Alternate Procedure for PAPR**

Use one of the procedures presented in 5.2(ANSI C63.26-2015) to measure the total peak power and record as P_{Pk}.

Use one of the applicable procedures presented 5.2(ANSI C63.26-2015) to measure the total average power and record as P_{Avg}. Determine the P.A.R. from:

$$P.A.R_{(dB)} = P_{Pk\,(dBm)} - P_{Avg\,(dBm)}\ (P_{Avg} = \text{Average Power} + \text{Duty cycle Factor})$$

Test Settings(Peak Power)

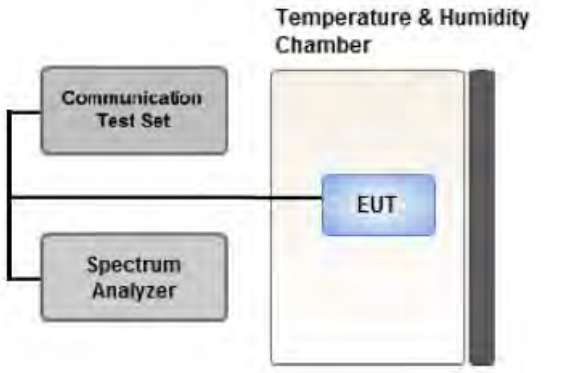
The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW ≥ 3 × RBW.

1. Set the RBW ≥ OBW.
2. Set VBW ≥ 3 × RBW.
3. Set span ≥ 2 × OBW.
4. Sweep time ≥ 10 × (number of points in sweep) × (transmission symbol period).
5. Detector = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the peak amplitude level.

Test Settings(Average Power)

1. Set span to 2 × to 3 × the OBW.
2. Set RBW ≥ OBW.
3. Set VBW ≥ 3 × RBW.
4. Set number of measurement points in sweep ≥ 2 × span / RBW.
5. Sweep time:
   Set ≥ [10 × (number of points in sweep) × (transmission period)] for single sweep (automation-compatible) measurement. The transmission period is the (on + off) time.
6. Detector = power averaging (rms).
7. Set sweep trigger to “free run.”
8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. (To accurately determine the average power over the on and off period of the transmitter, it can be necessary to increase the number of traces to be averaged above 100 or, if using a manually configured sweep time, increase the sweep time.)
9. Use the peak marker function to determine the maximum amplitude level.
10. Add [10 log (1/duty cycle)] to the measured maximum power level to compute the average power during continuous transmission. For example, add [10 log (1/0.25)] = 6 dB if the duty cycle is a constant 25 %.

3.5 OCCUPIED BANDWIDTH.



Test setup

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

The EUT makes a call to the communication simulator.

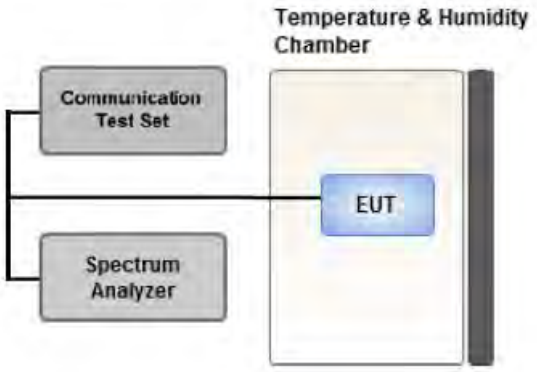
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth

Test Settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99 % occupied bandwidth and the 26 dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5 % of the expected OBW
3. VBW ≥ 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5 % of the 99 % occupied bandwidth observed in Step 7

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic.

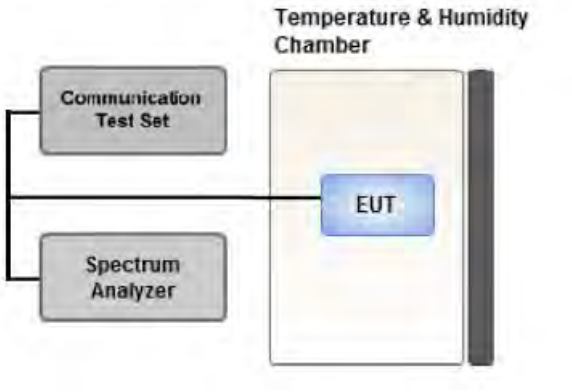
All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Settings

1. RBW = 1 MHz
2. VBW ≥ 3 MHz
3. Detector = RMS
4. Trace Mode = trace average
5. Sweep time = auto
6. Number of points in sweep ≥ 2 x Span / RBW

3.7 BAND EDGE



Test setup

Test Overview

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW > 1 % of the emission bandwidth
4. VBW > 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
7. Trace mode = trace average
8. Sweep time = auto couple
9. The trace was allowed to stabilize

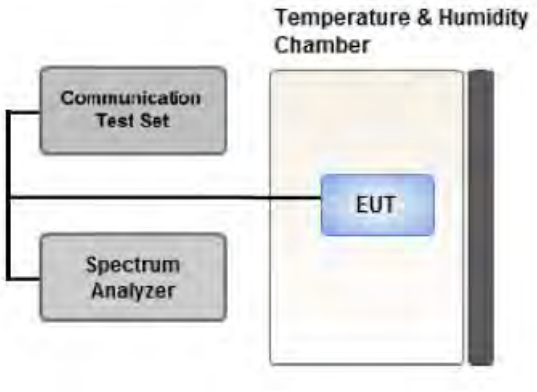
Test Notes

According to FCC 22.917, 24.238, 27.53 specified that power of any emission outside of The authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

All measurements were done at 2 channels(low and high operational frequency range.)

The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE



Test setup

Test Overview

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015.

The frequency stability of the transmitter is measured by:

1. Temperature:

   The temperature is varied from -30 °C to +50 °C in 10 °C increments using an environmental chamber.

2. Primary Supply Voltage:

   .- Unless otherwise specified, vary primary supply voltage from 85 % to 115 % of the nominal value for other than hand carried battery equipment.

   .- For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20 °C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10 °C intervals ranging from -30 °C to +50 °C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

3.9 WORST CASE(RADIATED TEST)

- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- All modes of operation were investigated and the worst case configuration results are reported.
  Mode : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)
  Worst case : Stand alone
- In the case of radiated spurious emissions, all bandwidth of operation were investigated and the worst case bandwidth results are reported. (Worst case : 1.4 MHz)
- The worst case is reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the test data.
- Please refer to the table below.
- Main1 Antenna: LTE Band 66 (1710 – 1780 MHz) overlaps the entire frequency range of LTE Band 4 (1710 - 1755 MHz) and they have the same Tune-up power. Therefore, test data provided in this report covers Band 4 as well as Band 66.
- SM-A336M/DSN & additional models were tested and the worst case results are reported.

(Worst case : SM-A336M/DSN)

[Main1 Ant Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Effective Isotropic Radiated Power	QPSK, 16QAM, 64QAM, 256QAM	1	0	Z
Radiated Spurious and Harmonic Emissions	QPSK	1	0	Y

[Sub2 Ant Worst case]

Test Description	Modulation	RB size	RB offset	Axis
Effective Isotropic Radiated Power	QPSK, 16QAM, 64QAM, 256QAM	1	0	Z
Radiated Spurious and Harmonic Emissions	QPSK	1	0	Y

3.10 WORST CASE(CONDUCTED TEST)

- All modes of operation were investigated and the worst case configuration results are reported.
- Main1 Antenna: LTE Band 66 (1710 – 1780 MHz) overlaps the entire frequency range of LTE Band 4 (1710 - 1755 MHz) and they have the same Tune-up power. Therefore, test data provided in this report covers Band 4 as well as Band 66.
- SM-A336M/DSN & additional models were tested and the worst case results are reported.

(Worst case : SM-A336M/DSN)

[Worst case]

Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth	QPSK, 16QAM, 64QAM, 256QAM	1.4, 3, 5, 10, 15, 20	Mid	Full RB	0
Peak-To-Average Ratio	QPSK, 16QAM, 64QAM, 256QAM	1.4, 3, 5, 10, 15, 20	Mid	Full RB	0
Band Edge	QPSK	1.4	Low	1	0
			High	1	5
		3	Low	1	0
			High	1	14
		5	Low	1	0
			High	1	24
		10	Low	1	0
			High	1	49
		15	Low	1	0
			High	1	74
		20	Low	1	0
			High	1	99
		1.4, 3, 5, 10, 15, 20	Low, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	QPSK	1.4, 3, 5, 10, 15, 20	Low, Mid, High	1	0

4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
H.P.F	FBSR-02B(WHK1.2/15 G-10EF)	T&M SYSTEM	-	03/02/2022	Annual
H.P.F	FBSR-02B(WHK3.3/18 G-10EF)	T&M SYSTEM	-	03/02/2022	Annual
Power Splitter(DC ~ 26.5 GHz)	11667B	Hewlett Packard	11275	04/07/2022	Annual
DC Power Supply	E3632A	Agilent	MY40010147	06/28/2022	Annual
Dipole Antenna	UHAP	Schwarzbeck	557	04/05/2023	Biennial
Dipole Antenna	UHAP	Schwarzbeck	558	04/05/2023	Biennial
Chamber	SU-642	ESPEC	93008124	03/15/2022	Annual
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	147	08/30/2022	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1298	09/15/2023	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	10/13/2022	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	02/11/2022	Biennial
Signal Analyzer(10 Hz ~ 26.5 GHz)	N9020A	Agilent	MY52090906	05/18/2022	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	06/01/2022	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	REOHDE & SCHWARZ	100931	09/29/2022	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/18/2022	Annual
Loop Antenna(9 kHz ~ 30 MHz)	FMZB1513	Schwarzbeck	1513-333	03/19/2022	Biennial
Bilog Antenna	VULB9160	Schwarzbeck	3150	03/03/2023	Biennial
Hybrid Antenna	VULB9168	Schwarzbeck	760	02/22/2023	Biennial
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262116770	07/12/2022	Annual
Wideband Radio Communication Tester	MT8820C	Anritsu Corp.	6201026545	01/07/2022	Annual
SIGNAL GENERATOR (100 kHz ~ 40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/05/2022	Annual
Signal Analyzer(5 Hz ~ 40.0 GHz)	N9030B	KEYSIGHT	MY55480167	06/02/2022	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

1. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
2. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

5. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4:2014. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty (±dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.82 (Confidence level about 95 %, k=2)
Radiated Disturbance (9 kHz ~ 30 MHz)	3.40 (Confidence level about 95 %, k=2)
Radiated Disturbance (30 MHz ~ 1 GHz)	4.80 (Confidence level about 95 %, k=2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.70 (Confidence level about 95 %, k=2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.05 (Confidence level about 95 %, k=2)

6. SUMMARY OF TEST RESULTS

6.1 Test Condition : Conducted Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Occupied Bandwidth	§2.1049	N/A	PASS
Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	§2.1051, §27.53(h)	< 43 + 10log10 (P[Watts]) at Band Edge and for all out-of-band emissions	PASS
Conducted Output Power	§2.1046	N/A	**See Note1**
Peak- to- Average Ratio	§27.50(d)(5)	< 13 dB	PASS
Frequency stability / variation of ambient temperature	§2.1055, § 27.54	Emission must remain in band	PASS

Note:

1. See SAR Report

6.2 Test Condition : Radiated Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Equivalent Isotropic Radiated Power	§27.50(d)(4)	< 1 Watts max. EIRP	PASS
Radiated Spurious and Harmonic Emissions	§2.1053, §27.53(h)	< 43 + 10log10 (P[Watts]) for all out-of band emissions	PASS

7. SAMPLE CALCULATION

7.1 ERP Sample Calculation

Ch./ Freq.		Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol.	ERP	
channel	Freq.(MHz)						W	dBm
128	824.20	-21.37	38.40	-10.61	0.95	H	0.483	26.84

ERP = Substitute LEVEL(dBm) + Ant. Gain – CL(Cable Loss)

1) The EUT mounted on a non-conductive turntable is 2.5 meter above test site ground level.

2) During the test , the turn table is rotated until the maximum signal is found.

3) Record the field strength meter's level.

4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.

5) Increase the signal generator output till the field strength meter's level is equal to the item (3).

6) The signal generator output level with Ant. Gain and cable loss are the rating of effective radiated power.

7.2 EIRP Sample Calculation

Ch./ Freq.		Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol.	EIRP	
channel	Freq.(MHz)						W	dBm
132322	1,732.50	-15.75	18.45	9.90	1.76	H	0.456	26.59

EIRP = Substitute LEVEL(dBm) + Ant. Gain – CL(Cable Loss)

1) The EUT mounted on a non-conductive turntable is 2.5 meter above test site ground level.

2) During the test , the turn table is rotated until the maximum signal is found.

3) Record the field strength meter's level.

4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.

5) Increase the signal generator output till the field strength meter's level is equal to the item (3).

6) The signal generator output level with Ant. Gain and cable loss are the rating of equivalent isotropic radiated power.

7.3. Emission Designator

GSM Emission Designator

Emission Designator = 249KGXW

GSM BW = 249 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 249KG7W

GSM BW = 249 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M17F9W

WCDMA BW = 4.17 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

QPSK Modulation

Emission Designator = 4M48G7D

LTE BW = 4.48 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

QAM Modulation

Emission Designator = 4M48W7D

LTE BW = 4.48 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand

8. TEST DATA

8.1 EQUIVALENT ISOTROPIC RADIATED POWER

8.1.1 Main1 Ant

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
1710.7	LTE B66/ B4 1.4 MHz	QPSK	-20.62	13.17	10.04	2.05	V	< 1.00	0.131	21.16
		16-QAM	-20.93	12.86	10.04	2.05	V		0.122	20.85
		64-QAM	-21.90	11.89	10.04	2.05	V		0.097	19.88
		256-QAM	-24.93	8.86	10.04	2.05	V		0.048	16.85
1745.0		QPSK	-21.00	12.72	10.18	2.06	V		0.121	20.84
		16-QAM	-21.82	11.90	10.18	2.06	V		0.101	20.02
		64-QAM	-22.96	10.76	10.18	2.06	V		0.077	18.88
		256-QAM	-25.96	7.76	10.18	2.06	V		0.039	15.88
1779.3		QPSK	-21.18	12.50	10.26	2.07	V		0.117	20.69
		16-QAM	-22.12	11.56	10.26	2.07	V		0.095	19.75
		64-QAM	-23.19	10.49	10.26	2.07	V		0.074	18.68
		256-QAM	-26.24	7.44	10.26	2.07	V		0.037	15.63

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
1711.5	LTE B66/ B4 3 MHz	QPSK	-20.64	13.15	10.04	2.05	V	< 1.00	0.130	21.14
		16-QAM	-20.90	12.89	10.04	2.05	V		0.122	20.88
		64-QAM	-21.84	11.95	10.04	2.05	V		0.099	19.94
		256-QAM	-24.86	8.93	10.04	2.05	V		0.049	16.92
1745.0		QPSK	-21.25	12.47	10.18	2.06	V		0.115	20.59
		16-QAM	-21.93	11.79	10.18	2.06	V		0.098	19.91
		64-QAM	-22.86	10.86	10.18	2.06	V		0.079	18.98
		256-QAM	-25.92	7.80	10.18	2.06	V		0.039	15.92
1778.5		QPSK	-21.18	12.50	10.26	2.07	V		0.117	20.69
		16-QAM	-22.07	11.61	10.26	2.07	V		0.096	19.80
		64-QAM	-23.11	10.57	10.26	2.07	V		0.075	18.76
		256-QAM	-26.11	7.57	10.26	2.07	V		0.038	15.76

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
1712.5	LTE B66/ B4 5 MHz	QPSK	-21.43	12.36	10.04	2.05	V	< 1.00	0.108	20.35
		16-QAM	-21.66	12.13	10.04	2.05	V		0.103	20.12
		64-QAM	-22.25	11.54	10.04	2.05	V		0.090	19.53
		256-QAM	-24.85	8.94	10.04	2.05	V		0.049	16.93
1745.0		QPSK	-21.26	12.46	10.18	2.06	V		0.114	20.58
		16-QAM	-21.92	11.80	10.18	2.06	V		0.098	19.92
		64-QAM	-23.10	10.62	10.18	2.06	V		0.075	18.74
		256-QAM	-26.03	7.69	10.18	2.06	V		0.038	15.81
1777.5		QPSK	-21.35	12.33	10.26	2.07	V		0.113	20.52
		16-QAM	-21.99	11.69	10.26	2.07	V		0.097	19.88
		64-QAM	-23.07	10.61	10.26	2.07	V		0.076	18.80
		256-QAM	-26.08	7.60	10.26	2.07	V		0.038	15.79

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
1715.0	LTE B66/ B4 10 MHz	QPSK	-21.06	12.69	10.06	2.05	V	< 1.00	0.118	20.70
		16-QAM	-21.36	12.39	10.06	2.05	V		0.110	20.40
		64-QAM	-21.89	11.86	10.06	2.05	V		0.097	19.87
		256-QAM	-24.89	8.86	10.06	2.05	V		0.049	16.87
1745.0		QPSK	-21.16	12.56	10.18	2.06	V		0.117	20.68
		16-QAM	-21.94	11.78	10.18	2.06	V		0.098	19.90
		64-QAM	-22.93	10.79	10.18	2.06	V		0.078	18.91
		256-QAM	-25.92	7.80	10.18	2.06	V		0.039	15.92
1775.0		QPSK	-21.01	12.68	10.25	2.07	V		0.122	20.86
		16-QAM	-21.83	11.86	10.25	2.07	V		0.101	20.04
		64-QAM	-22.97	10.72	10.25	2.07	V		0.078	18.90
		256-QAM	-25.97	7.72	10.25	2.07	V		0.039	15.90

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
1717.5	LTE B66/ B4 15 MHz	QPSK	-21.62	12.09	10.08	2.05	V	< 1.00	0.103	20.12
		16-QAM	-21.88	11.83	10.08	2.05	V		0.097	19.86
		64-QAM	-22.39	11.32	10.08	2.05	V		0.086	19.35
		256-QAM	-25.00	8.71	10.08	2.05	V		0.047	16.74
1745.0		QPSK	-21.08	12.64	10.18	2.06	V		0.119	20.76
		16-QAM	-21.78	11.94	10.18	2.06	V		0.101	20.06
		64-QAM	-22.96	10.76	10.18	2.06	V		0.077	18.88
		256-QAM	-26.07	7.65	10.18	2.06	V		0.038	15.77
1772.5		QPSK	-21.25	12.44	10.24	2.07	V		0.115	20.61
		16-QAM	-21.74	11.95	10.24	2.07	V		0.103	20.12
		64-QAM	-22.92	10.77	10.24	2.07	V		0.078	18.94
		256-QAM	-25.95	7.74	10.24	2.07	V		0.039	15.91

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
1720.0	LTE B66/ B4 20 MHz	QPSK	-21.76	11.95	10.08	2.05	V	< 1.00	0.100	19.98
		16-QAM	-22.06	11.65	10.08	2.05	V		0.093	19.68
		64-QAM	-22.51	11.20	10.08	2.05	V		0.084	19.23
		256-QAM	-25.03	8.68	10.08	2.05	V		0.047	16.71
1745.0		QPSK	-21.05	12.67	10.18	2.06	V		0.120	20.79
		16-QAM	-21.83	11.89	10.18	2.06	V		0.100	20.01
		64-QAM	-22.91	10.81	10.18	2.06	V		0.078	18.93
		256-QAM	-25.93	7.79	10.18	2.06	V		0.039	15.91
1770.0		QPSK	-21.66	12.03	10.24	2.07	V		0.105	20.20
		16-QAM	-21.97	11.72	10.24	2.07	V		0.098	19.89
		64-QAM	-22.80	10.89	10.24	2.07	V		0.081	19.06
		256-QAM	-25.76	7.93	10.24	2.07	V		0.041	16.10

8.1.2 Sub2 Ant

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
1710.7	LTE B66 1.4 MHz	QPSK	-23.15	9.71	9.76	2.08	V	< 1.00	0.055	17.39
		16-QAM	-24.23	8.63	9.76	2.08	V		0.043	16.31
		64-QAM	-25.29	7.57	9.76	2.08	V		0.034	15.25
		256-QAM	-27.99	4.87	9.76	2.08	V		0.018	12.55
1745.0		QPSK	-23.52	9.61	9.97	1.99	V		0.057	17.59
		16-QAM	-24.57	8.56	9.97	1.99	V		0.045	16.54
		64-QAM	-25.51	7.62	9.97	1.99	V		0.036	15.60
		256-QAM	-28.56	4.57	9.97	1.99	V		0.018	12.55
1779.3		QPSK	-23.05	10.09	10.12	2.15	V		0.064	18.06
		16-QAM	-24.22	8.92	10.12	2.15	V		0.049	16.89
		64-QAM	-25.13	8.01	10.12	2.15	V		0.040	15.98
		256-QAM	-28.17	4.97	10.12	2.15	V		0.020	12.94

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
1711.5	LTE B66 3 MHz	QPSK	-23.21	9.65	9.76	2.08	V	< 1.00	0.054	17.33
		16-QAM	-24.35	8.51	9.76	2.08	V		0.042	16.19
		64-QAM	-25.28	7.58	9.76	2.08	V		0.034	15.26
		256-QAM	-28.28	4.58	9.76	2.08	V		0.017	12.26
1745.0		QPSK	-23.25	9.88	9.97	1.99	V		0.061	17.86
		16-QAM	-24.33	8.80	9.97	1.99	V		0.048	16.78
		64-QAM	-25.30	7.83	9.97	1.99	V		0.038	15.81
		256-QAM	-28.31	4.82	9.97	1.99	V		0.019	12.80
1778.5		QPSK	-23.11	10.03	10.12	2.15	V		0.063	18.00
		16-QAM	-23.99	9.15	10.12	2.15	V		0.052	17.12
		64-QAM	-24.98	8.16	10.12	2.15	V		0.041	16.13
		256-QAM	-27.97	5.17	10.12	2.15	V		0.021	13.14

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
1712.5	LTE B66 5 MHz	QPSK	-23.20	9.66	9.76	2.08	V	< 1.00	0.054	17.34
		16-QAM	-24.32	8.54	9.76	2.08	V		0.042	16.22
		64-QAM	-25.29	7.57	9.76	2.08	V		0.034	15.25
		256-QAM	-28.26	4.60	9.76	2.08	V		0.017	12.28
1745.0		QPSK	-23.18	9.95	9.97	1.99	V		0.062	17.93
		16-QAM	-24.23	8.90	9.97	1.99	V		0.049	16.88
		64-QAM	-25.23	7.90	9.97	1.99	V		0.039	15.88
		256-QAM	-28.24	4.89	9.97	1.99	V		0.019	12.87
1777.5		QPSK	-23.14	10.00	10.12	2.15	V		0.063	17.97
		16-QAM	-24.08	9.06	10.12	2.15	V		0.051	17.03
		64-QAM	-25.12	8.02	10.12	2.15	V		0.040	15.99
		256-QAM	-28.15	4.99	10.12	2.15	V		0.020	12.96

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
1715.0	LTE B66 10 MHz	QPSK	-23.22	9.80	9.79	2.07	V	< 1.00	0.057	17.52
		16-QAM	-24.32	8.70	9.79	2.07	V		0.044	16.42
		64-QAM	-25.30	7.72	9.79	2.07	V		0.035	15.44
		256-QAM	-28.31	4.71	9.79	2.07	V		0.017	12.43
1745.0		QPSK	-23.05	10.08	9.97	1.99	V		0.064	18.06
		16-QAM	-24.11	9.02	9.97	1.99	V		0.050	17.00
		64-QAM	-25.13	8.00	9.97	1.99	V		0.040	15.98
		256-QAM	-28.12	5.01	9.97	1.99	V		0.020	12.99
1775.0		QPSK	-23.20	10.03	10.10	2.14	V		0.063	17.99
		16-QAM	-24.29	8.94	10.10	2.14	V		0.049	16.90
		64-QAM	-25.20	8.03	10.10	2.14	V		0.040	15.99
		256-QAM	-28.18	5.05	10.10	2.14	V		0.020	13.01

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
1717.5	LTE B66 15 MHz	QPSK	-23.18	9.81	9.82	2.07	V	< 1.00	0.057	17.56
		16-QAM	-24.25	8.74	9.82	2.07	V		0.045	16.49
		64-QAM	-25.27	7.72	9.82	2.07	V		0.035	15.47
		256-QAM	-28.29	4.70	9.82	2.07	V		0.018	12.45
1745.0		QPSK	-23.22	9.91	9.97	1.99	V		0.062	17.89
		16-QAM	-24.28	8.85	9.97	1.99	V		0.048	16.83
		64-QAM	-25.33	7.80	9.97	1.99	V		0.038	15.78
		256-QAM	-28.25	4.88	9.97	1.99	V		0.019	12.86
1772.5		QPSK	-23.45	9.87	10.08	2.13	V		0.061	17.82
		16-QAM	-24.45	8.87	10.08	2.13	V		0.048	16.82
		64-QAM	-25.45	7.87	10.08	2.13	V		0.038	15.82
		256-QAM	-28.49	4.83	10.08	2.13	V		0.019	12.78

Freq (MHz)	Mod/ Bandwidth	Modulation	Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain(dBi)	C.L	Pol	Limit	EIRP	
								W	W	dBm
1720.0	LTE B66 20 MHz	QPSK	-23.15	10.02	9.82	2.05	V	< 1.00	0.060	17.79
		16-QAM	-24.28	8.89	9.82	2.05	V		0.046	16.66
		64-QAM	-25.30	7.87	9.82	2.05	V		0.037	15.64
		256-QAM	-28.25	4.92	9.82	2.05	V		0.019	12.69
1745.0		QPSK	-23.20	9.93	9.97	1.99	V		0.062	17.91
		16-QAM	-24.20	8.93	9.97	1.99	V		0.049	16.91
		64-QAM	-25.26	7.87	9.97	1.99	V		0.038	15.85
		256-QAM	-28.19	4.94	9.97	1.99	V		0.020	12.92
1770.0		QPSK	-23.54	9.78	10.08	2.13	V		0.059	17.73
		16-QAM	-24.68	8.64	10.08	2.13	V		0.046	16.59
		64-QAM	-25.60	7.72	10.08	2.13	V		0.037	15.67
		256-QAM	-28.65	4.67	10.08	2.13	V		0.018	12.62

8.2 RADIATED SPURIOUS EMISSIONS

8.2.1 Main1 Ant

▣ OPERATING FREQUENCY: 1710.7 MHz

▣ MEASURED OUTPUT POWER: 21.16 dBm = 0.130 W

▣ MODE: LTE B66 / B4

▣ MODULATION SIGNAL: 1.4 MHz QPSK

▣ DISTANCE: 3 meters

▣ LIMIT: 43 + 10 log10 (W) = 34.16 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	dBc
131979 (1710.7)	3 421.40	-47.73	12.56	-54.46	2.95	H	-44.85	66.01
	5 132.10	-56.83	12.26	-54.49	3.67	H	-45.90	67.06
	6 842.80	-55.68	12.00	-49.06	4.25	V	-41.31	62.47
132322 (1745.0)	3 490.00	-48.76	12.42	-54.86	2.97	V	-45.41	66.57
	5 235.00	-56.73	12.71	-55.93	3.70	V	-46.91	68.07
	6 980.00	-55.71	11.52	-47.53	4.28	H	-40.29	61.44
132665 (1779.3)	3 558.60	-51.04	12.38	-56.88	3.01	V	-47.51	68.66
	5 337.90	-56.34	13.00	-55.61	3.74	H	-46.35	67.51
	7 117.20	-56.68	10.86	-47.63	4.34	H	-41.11	62.27

8.2.2 Sub2 Ant

▣ OPERATING FREQUENCY: 1779.3 MHz

▣ MEASURED OUTPUT POWER: 18.06 dBm = 0.064 W

▣ MODE: LTE B66

▣ MODULATION SIGNAL: 1.4 MHz QPSK

▣ DISTANCE: 3 meters

▣ LIMIT: 43 + 10 log10 (W) = 31.06 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	dBc
131979 (1710.7)	3 421.40	-50.96	11.30	-52.43	2.99	H	-44.12	62.18
	5 132.10	-49.51	11.32	-43.59	3.78	H	-36.05	54.12
	6 842.80	-63.08	11.18	-51.48	4.30	V	-44.60	62.67
132322 (1745.0)	3 490.00	-47.39	11.46	-48.70	3.05	V	-40.29	58.35
	5 235.00	-54.08	11.57	-48.77	3.79	V	-40.99	59.05
	6 980.00	-63.28	11.16	-51.05	4.51	H	-44.40	62.46
132665 (1779.3)	3 558.60	-46.31	11.74	-48.14	3.10	H	-39.50	57.56
	5 337.90	-50.55	11.78	-45.72	3.78	H	-37.72	55.78
	7 117.20	-64.64	10.92	-50.34	4.34	H	-43.76	61.82

8.3 PEAK-TO-AVERAGE RATIO

8.3.1 Main1 Ant

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
66/4	1.4 MHz	1745.0	QPSK	6	0	5.04
			16-QAM			5.26
			64-QAM			5.54
			256-QAM			5.63
	3 MHz		QPSK	15		5.18
			16-QAM			5.50
			64-QAM			5.68
			256-QAM			5.78
	5 MHz		QPSK	25		5.12
			16-QAM			5.49
			64-QAM			5.67
			256-QAM			5.73
	10 MHz		QPSK	50		5.17
			16-QAM			5.47
			64-QAM			5.70
			256-QAM			5.77
	15 MHz		QPSK	75		5.09
			16-QAM			5.45
			64-QAM			5.71
			256-QAM			5.81
	20 MHz		QPSK	100		5.06
			16-QAM			5.47
			64-QAM			5.74
			256-QAM			5.82

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 199 ~ 222.

8.3.2 Sub2 Ant

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
66	1.4 MHz	1745.0	QPSK	6	0	5.52
			16-QAM			5.85
			64-QAM			5.99
			256-QAM			5.94
	3 MHz		QPSK	15		5.72
			16-QAM			6.06
			64-QAM			6.13
			256-QAM			6.03
	5 MHz		QPSK	25		5.54
			16-QAM			5.98
			64-QAM			6.15
			256-QAM			6.24
	10 MHz		QPSK	50		5.71
			16-QAM			5.97
			64-QAM			6.22
			256-QAM			6.38
	15 MHz		QPSK	75		5.53
			16-QAM			5.95
			64-QAM			6.18
			256-QAM			6.32
	20 MHz		QPSK	100		5.50
			16-QAM			5.92
			64-QAM			6.16
			256-QAM			6.26

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 223 ~ 246.

8.4 OCCUPIED BANDWIDTH

8.4.1 Main1 Ant

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
66/4	1.4 MHz	1745.0	QPSK	6	0	1.0927
			16-QAM			1.1012
			64-QAM			1.0988
			256-QAM			1.1057
	3 MHz		QPSK	15		2.7326
			16-QAM			2.7337
			64-QAM			2.7223
			256-QAM			2.7216
	5 MHz		QPSK	25		4.5143
			16-QAM			4.5214
			64-QAM			4.5356
			256-QAM			4.5253
	10 MHz		QPSK	50		9.0146
			16-QAM			9.0204
			64-QAM			9.0546
			256-QAM			9.0096
	15 MHz		QPSK	75		13.445
			16-QAM			13.442
			64-QAM			13.449
			256-QAM			13.444
	20 MHz		QPSK	100		17.912
			16-QAM			17.887
			64-QAM			17.881
			256-QAM			17.904

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 151 ~ 174.

8.4.2 Sub2 Ant

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
66	1.4 MHz	1745.0	QPSK	6	0	1.1069
			16-QAM			1.1020
			64-QAM			1.1145
			256-QAM			1.1216
	3 MHz		QPSK	15		2.7614
			16-QAM			2.7827
			64-QAM			2.7533
			256-QAM			2.7867
	5 MHz		QPSK	25		4.5240
			16-QAM			4.5356
			64-QAM			4.5286
			256-QAM			4.5179
	10 MHz		QPSK	50		9.0430
			16-QAM			9.0052
			64-QAM			9.0386
			256-QAM			9.0159
	15 MHz		QPSK	75		13.485
			16-QAM			13.464
			64-QAM			13.530
			256-QAM			13.463
	20 MHz		QPSK	100		17.953
			16-QAM			17.937
			64-QAM			17.909
			256-QAM			17.923

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 175 ~ 198.

8.5 CONDUCTED SPURIOUS EMISSIONS

8.5.1 Main1 Ant

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
66/4	1.4	1710.7	3.4208	27.976	-76.199	-48.223	-13.00
		1745.0	3.4896	27.976	-74.370	-46.394	
		1779.3	3.5599	27.976	-74.962	-46.986	
	3	1711.5	3.4213	27.976	-76.251	-48.275	
		1745.0	3.4881	27.976	-73.382	-45.406	
		1778.5	3.5599	27.976	-76.597	-48.621	
	5	1712.5	3.4213	27.976	-74.950	-46.974	
		1745.0	3.4861	27.976	-73.747	-45.771	
		1777.5	3.5599	27.976	-75.848	-47.872	
	10	1715.0	3.4218	27.976	-75.198	-47.222	
		1745.0	3.4821	27.976	-74.459	-46.483	
		1775.0	3.5594	27.976	-75.822	-47.846	
	15	1717.5	3.4223	27.976	-74.253	-46.277	
		1745.0	3.4771	27.976	-74.004	-46.028	
		1772.5	3.5589	27.976	-75.179	-47.203	
	20	1720.0	3.4228	27.976	-74.950	-46.974	
		1745.0	3.4726	27.976	-74.375	-46.399	
		1770.0	3.5584	27.976	-75.270	-47.294	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 247 ~ 282.

2. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0

3. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)

4. Factor (dB) = Cable Loss + Attenuator + Power Splitter

Frequency Range (GHz)	Factor [dB]
0.03 – 1	25.270
1 – 5	27.976
5 – 10	28.591
10 – 15	29.116
15 – 20	29.489
Above 20(26.5)	30.131

8.5.2 Sub2 Ant

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
66	1.4	1710.7	9.1535	28.591	-79.946	-51.355	-13.00
		1745.0	3.4891	27.976	-65.981	-38.005	
		1779.3	3.5594	27.976	-65.985	-38.009	
	3	1711.5	3.4203	27.976	-65.047	-37.071	
		1745.0	3.4876	27.976	-62.699	-34.723	
		1778.5	3.5594	27.976	-62.380	-34.404	
	5	1712.5	3.4208	27.976	-78.330	-50.354	
		1745.0	3.4856	27.976	-60.129	-32.153	
		1777.5	3.5594	27.976	-63.229	-35.253	
	10	1715.0	3.4213	27.976	-74.757	-46.781	
		1745.0	3.4811	27.976	-62.202	-34.226	
		1775.0	3.5589	27.976	-62.635	-34.659	
	15	1717.5	3.4218	27.976	-78.987	-51.011	
		1745.0	3.4766	27.976	-61.041	-33.065	
		1772.5	3.5584	27.976	-63.152	-35.176	
	20	1720.0	3.4223	27.976	-77.842	-49.866	
		1745.0	3.4721	27.976	-60.057	-32.081	
		1770.0	3.5579	27.976	-62.778	-34.802	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 283 ~ 318.
2. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0
3. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)
4. Factor(dB) = Cable Loss + Attenuator + Power Splitter

Frequency Range (GHz)	Factor [dB]
0.03 – 1	25.270
1 – 5	27.976
5 – 10	28.591
10 – 15	29.116
15 – 20	29.489
Above 20(26.5)	30.131

8.6 BAND EDGE

8.6.1 Main1 Ant

- Plots of the EUT's Band Edge are shown Page 79 ~ 114.

8.6.2 Sub2 Ant

- Plots of the EUT's Band Edge are shown Page 115 ~ 150.

8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

8.7.1 Main1 Ant

▣ MODE: LTE 66/4

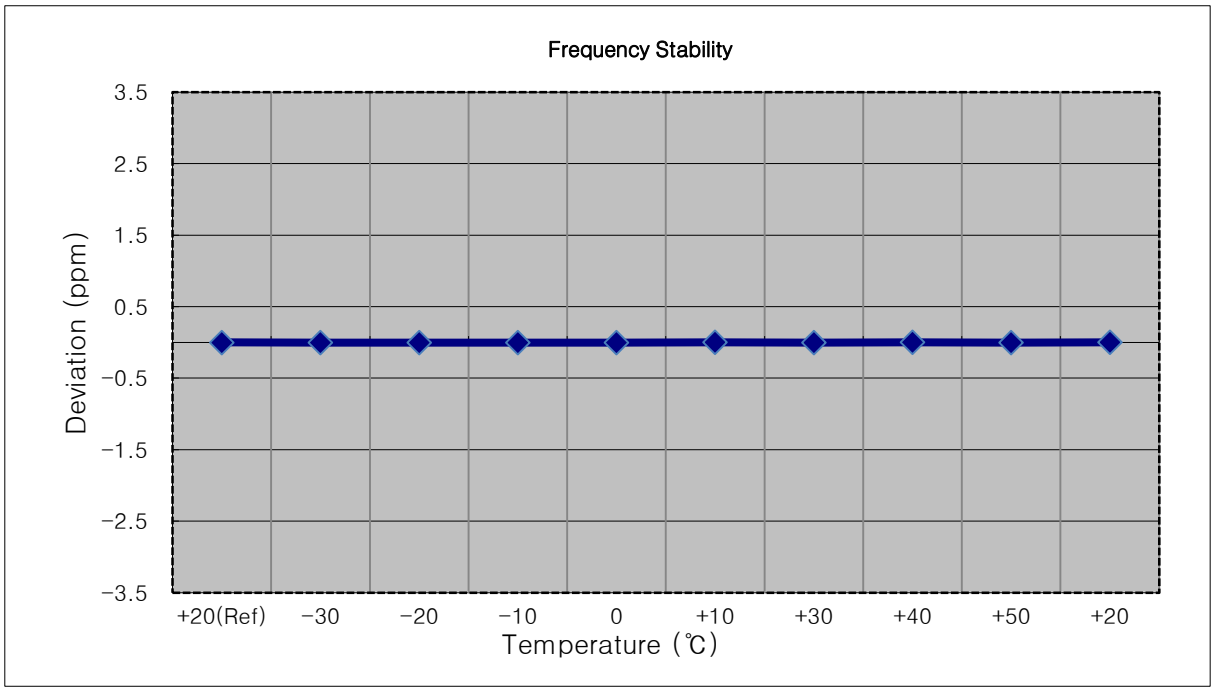
▣ OPERATING FREQUENCY: 1710,700,000 Hz

▣ CHANNEL: 131979 (1.4 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1710 700 003	0.0	0.000 000	0.000
100 %		-30	1710 700 000	-3.3	0.000 000	-0.002
100 %		-20	1710 699 999	-3.8	0.000 000	-0.002
100 %		-10	1710 700 001	-2.4	0.000 000	-0.001
100 %		0	1710 700 001	-2.6	0.000 000	-0.002
100 %		+10	1710 700 006	2.6	0.000 000	0.002
100 %		+30	1710 700 000	-3.6	0.000 000	-0.002
100 %		+40	1710 700 007	3.5	0.000 000	0.002
100 %		+50	1710 700 000	-3.0	0.000 000	-0.002
Batt. Endpoint	3.400	+20	1710 700 007	3.8	0.000 000	0.002



▣ MODE: LTE 66/4

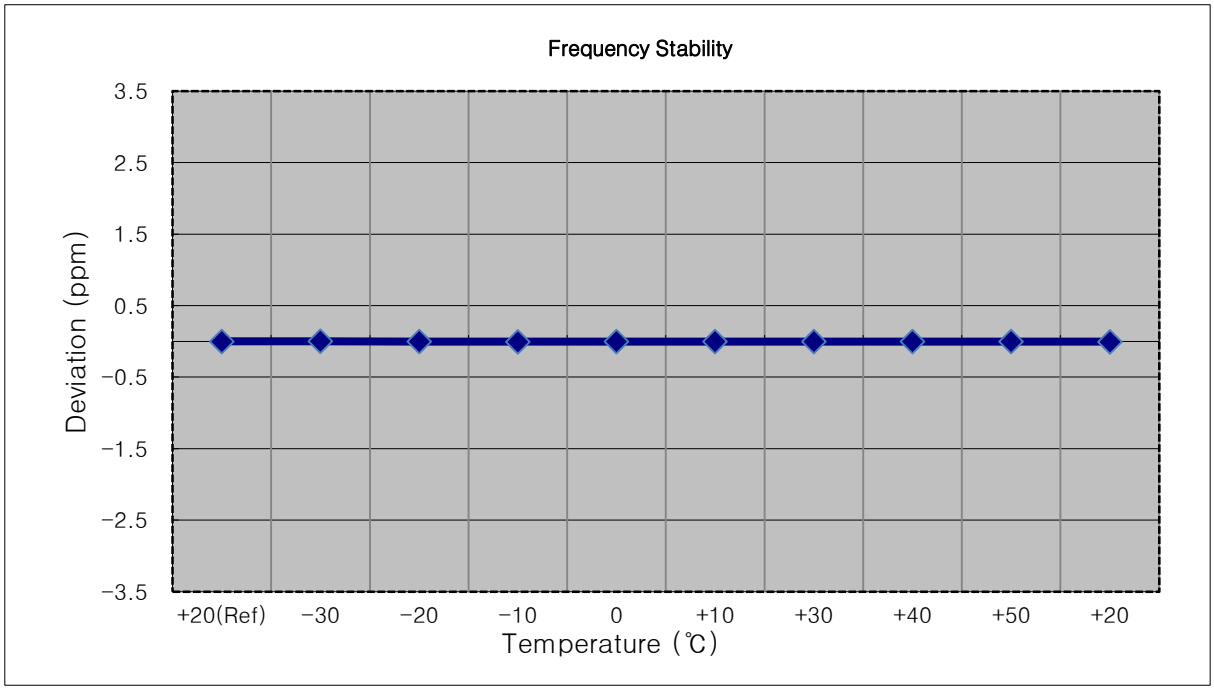
▣ OPERATING FREQUENCY: 1711,500,000 Hz

▣ CHANNEL: 131987 (3 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1711 500 003	0.0	0.000 000	0.000
100 %		-30	1711 500 007	3.7	0.000 000	0.002
100 %		-20	1711 499 999	-3.4	0.000 000	-0.002
100 %		-10	1711 499 995	-7.6	0.000 000	-0.004
100 %		0	1711 499 997	-5.7	0.000 000	-0.003
100 %		+10	1711 499 999	-3.6	0.000 000	-0.002
100 %		+30	1711 500 000	-3.0	0.000 000	-0.002
100 %		+40	1711 499 998	-4.4	0.000 000	-0.003
100 %		+50	1711 499 999	-3.7	0.000 000	-0.002
Batt. Endpoint	3.400	+20	1711 499 997	-5.8	0.000 000	-0.003



▣ MODE: LTE 66/4

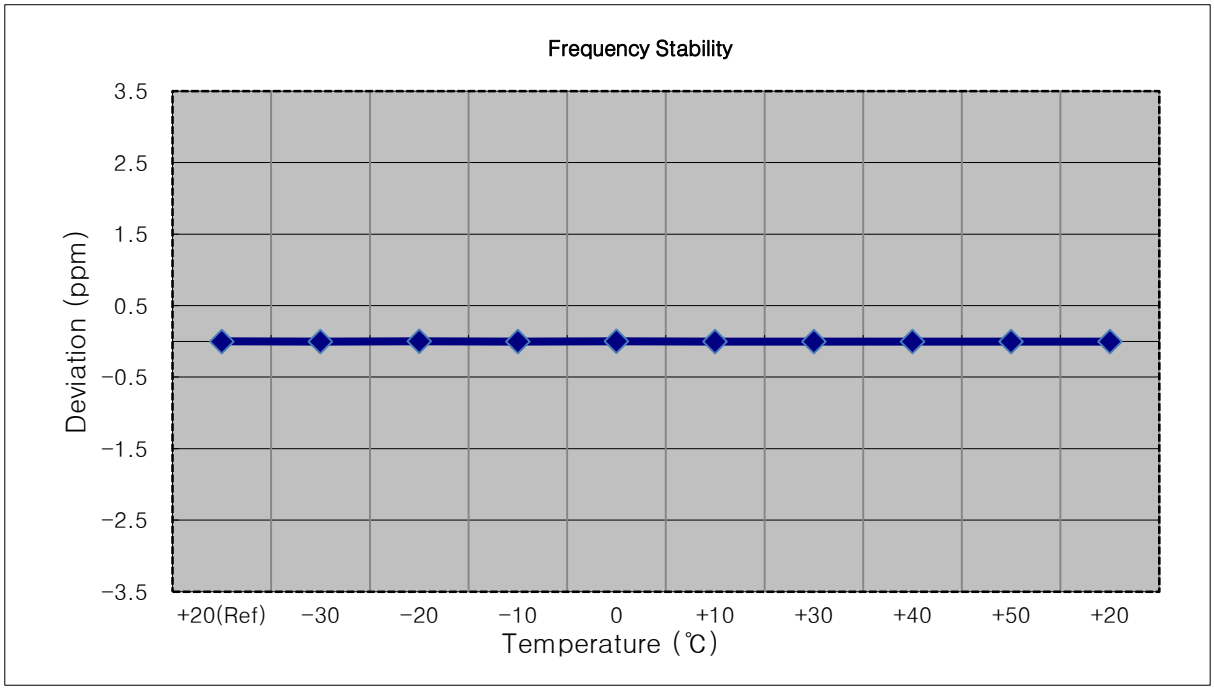
▣ OPERATING FREQUENCY: 1712,500,000 Hz

▣ CHANNEL: 131997 (5 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1712 499 995	0.0	0.000 000	0.000
100 %		-30	1712 499 991	-4.2	0.000 000	-0.002
100 %		-20	1712 499 999	4.3	0.000 000	0.003
100 %		-10	1712 499 990	-4.9	0.000 000	-0.003
100 %		0	1712 499 998	3.2	0.000 000	0.002
100 %		+10	1712 499 991	-4.5	0.000 000	-0.003
100 %		+30	1712 499 990	-5.0	0.000 000	-0.003
100 %		+40	1712 499 991	-4.4	0.000 000	-0.003
100 %		+50	1712 499 990	-4.8	0.000 000	-0.003
Batt. Endpoint	3.400	+20	1712 499 992	-3.5	0.000 000	-0.002



▣ MODE: LTE 66/4

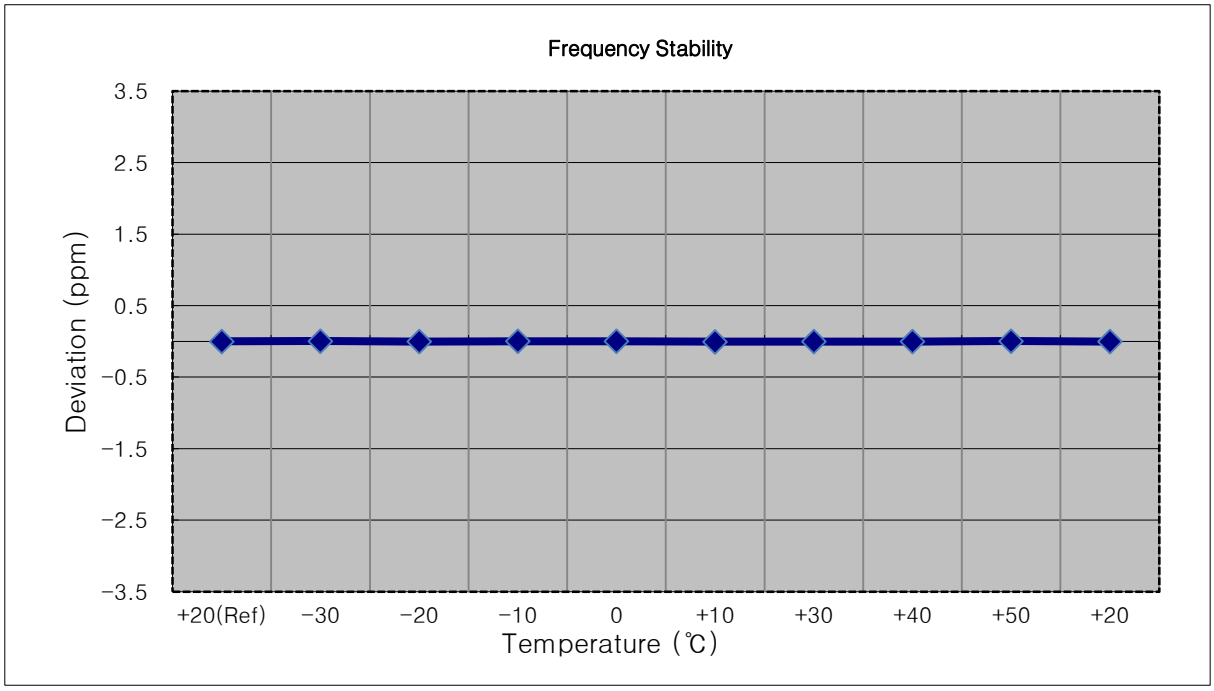
▣ OPERATING FREQUENCY: 1715,000,000 Hz

▣ CHANNEL: 132022 (10 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1715 000 004	0.0	0.000 000	0.000
100 %		-30	1715 000 011	6.9	0.000 000	0.004
100 %		-20	1714 999 999	-4.9	0.000 000	-0.003
100 %		-10	1715 000 010	5.7	0.000 000	0.003
100 %		0	1715 000 007	3.2	0.000 000	0.002
100 %		+10	1714 999 997	-7.1	0.000 000	-0.004
100 %		+30	1715 000 000	-4.7	0.000 000	-0.003
100 %		+40	1714 999 999	-4.9	0.000 000	-0.003
100 %		+50	1715 000 011	6.6	0.000 000	0.004
Batt. Endpoint	3.400	+20	1715 000 000	-4.0	0.000 000	-0.002



▣ MODE: LTE 66/4

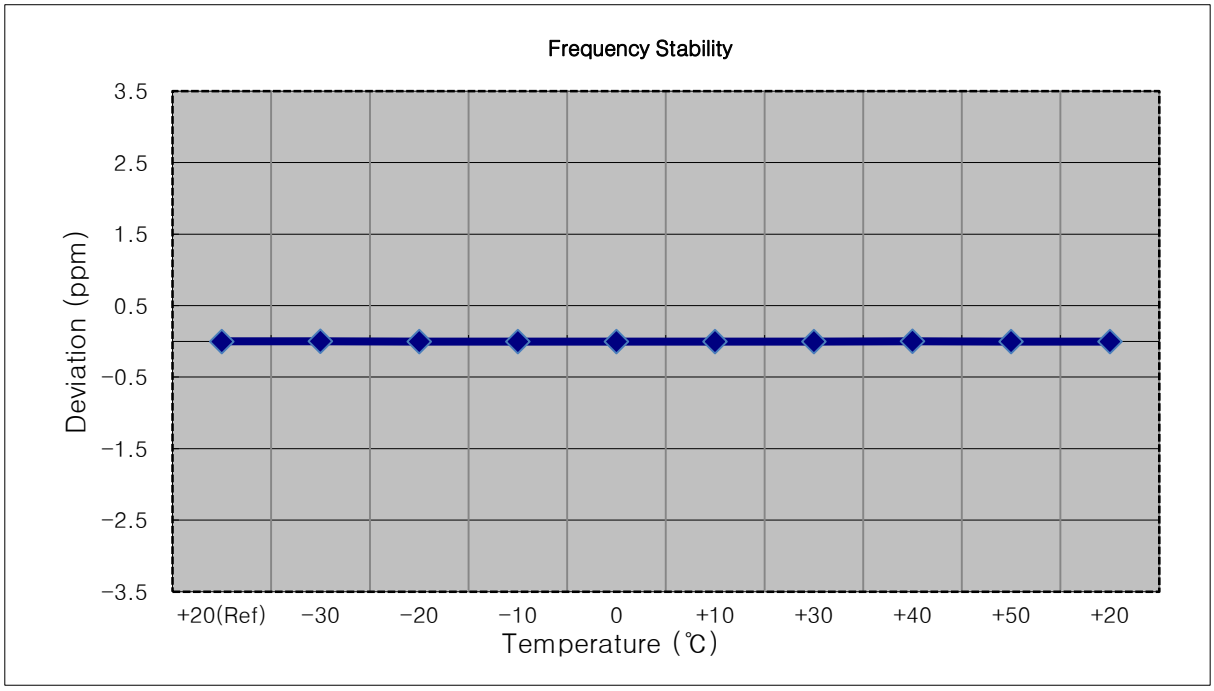
▣ OPERATING FREQUENCY: 1717,500,000 Hz

▣ CHANNEL: 132047 (15 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1717 499 997	0.0	0.000 000	0.000
100 %		-30	1717 500 001	4.0	0.000 000	0.002
100 %		-20	1717 499 993	-3.4	0.000 000	-0.002
100 %		-10	1717 499 992	-4.7	0.000 000	-0.003
100 %		0	1717 499 994	-3.0	0.000 000	-0.002
100 %		+10	1717 499 994	-3.3	0.000 000	-0.002
100 %		+30	1717 499 995	-2.1	0.000 000	-0.001
100 %		+40	1717 500 001	3.8	0.000 000	0.002
100 %		+50	1717 499 993	-4.1	0.000 000	-0.002
Batt. Endpoint	3.400	+20	1717 499 992	-5.0	0.000 000	-0.003



▣ MODE: LTE 66/4

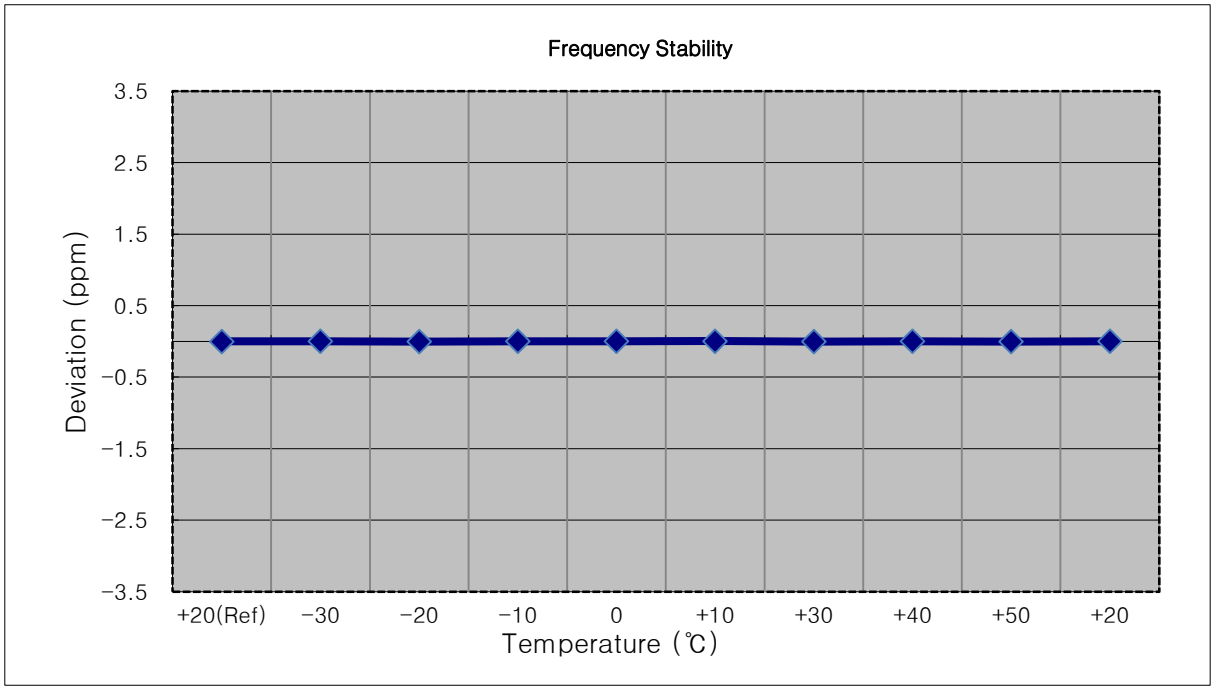
▣ OPERATING FREQUENCY: 1720,000,000 Hz

▣ CHANNEL: 132072 (20 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1720 000 004	0.0	0.000 000	0.000
100 %		-30	1720 000 007	3.1	0.000 000	0.002
100 %		-20	1720 000 001	-3.0	0.000 000	-0.002
100 %		-10	1720 000 007	3.2	0.000 000	0.002
100 %		0	1720 000 006	2.2	0.000 000	0.001
100 %		+10	1720 000 011	6.3	0.000 000	0.004
100 %		+30	1720 000 000	-3.9	0.000 000	-0.002
100 %		+40	1720 000 008	3.5	0.000 000	0.002
100 %		+50	1719 999 999	-5.3	0.000 000	-0.003
Batt. Endpoint	3.400	+20	1720 000 010	5.7	0.000 000	0.003



▣ MODE: LTE 66/4

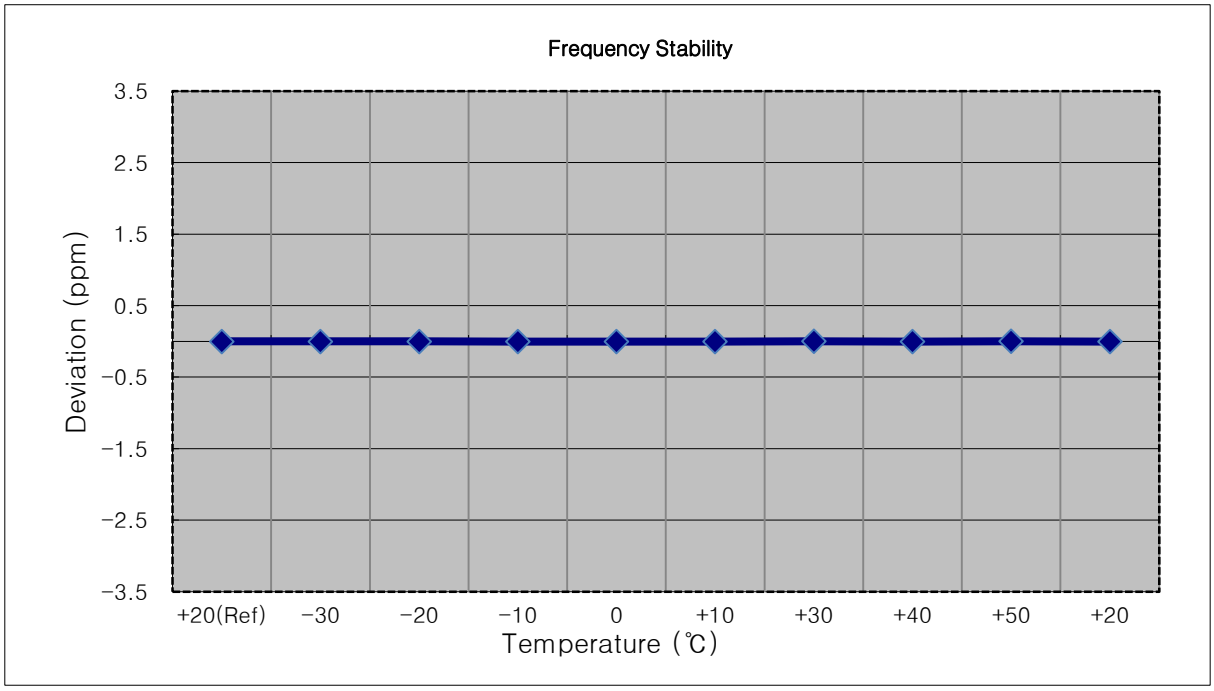
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (1.4 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1745 000 003	0.0	0.000 000	0.000
100 %		-30	1745 000 001	-2.0	0.000 000	-0.001
100 %		-20	1745 000 001	-1.8	0.000 000	-0.001
100 %		-10	1745 000 000	-3.1	0.000 000	-0.002
100 %		0	1745 000 001	-2.7	0.000 000	-0.002
100 %		+10	1745 000 001	-2.2	0.000 000	-0.001
100 %		+30	1745 000 006	2.9	0.000 000	0.002
100 %		+40	1745 000 001	-2.1	0.000 000	-0.001
100 %		+50	1745 000 006	2.8	0.000 000	0.002
Batt. Endpoint	3.400	+20	1745 000 001	-2.5	0.000 000	-0.001



▣ MODE: LTE 66/4

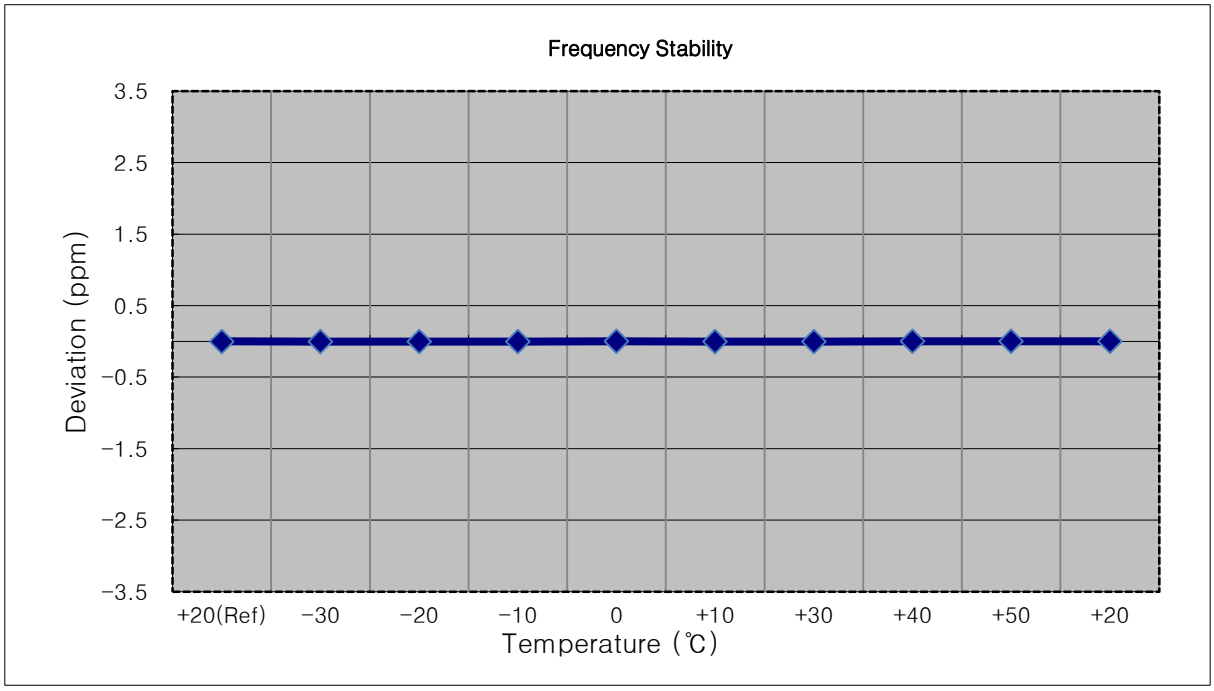
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (3 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1745 000 004	0.0	0.000 000	0.000
100 %		-30	1745 000 001	-3.2	0.000 000	-0.002
100 %		-20	1744 999 999	-5.0	0.000 000	-0.003
100 %		-10	1745 000 001	-2.5	0.000 000	-0.001
100 %		0	1745 000 007	3.6	0.000 000	0.002
100 %		+10	1744 999 999	-4.5	0.000 000	-0.003
100 %		+30	1745 000 001	-2.4	0.000 000	-0.001
100 %		+40	1745 000 006	2.4	0.000 000	0.001
100 %		+50	1745 000 007	3.6	0.000 000	0.002
Batt. Endpoint	3.400	+20	1745 000 007	2.8	0.000 000	0.002



▣ MODE: LTE 66/4

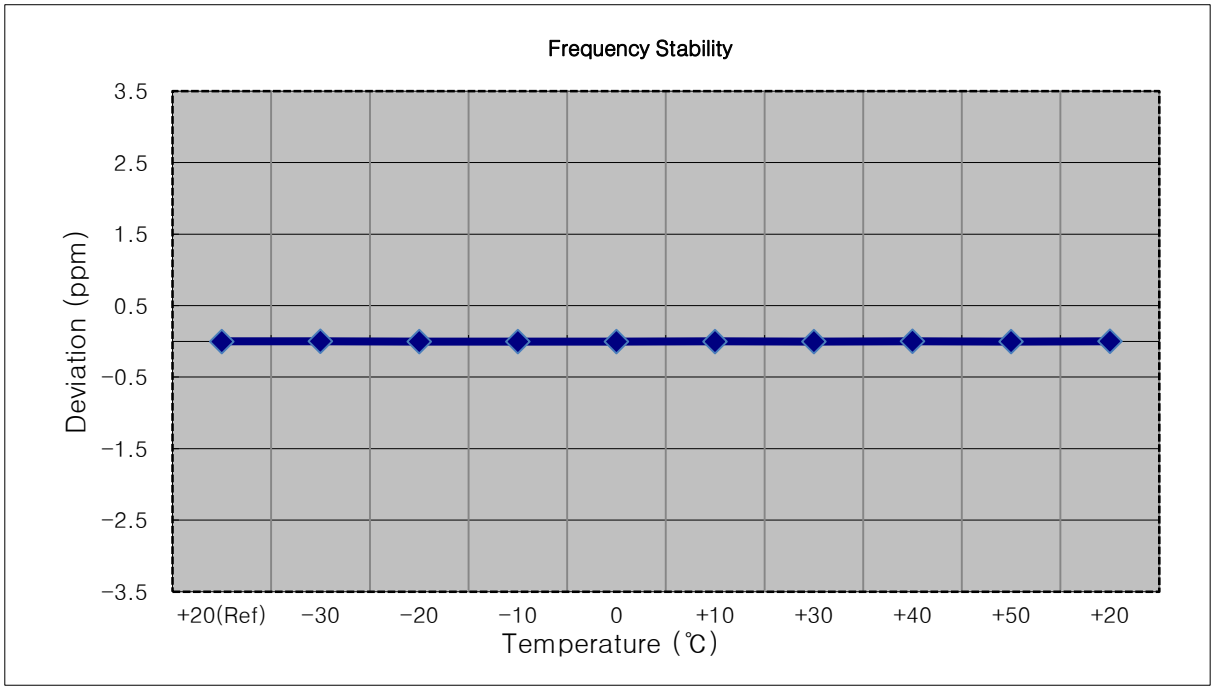
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (5 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1745 000 005	0.0	0.000 000	0.000
100 %		-30	1745 000 007	2.8	0.000 000	0.002
100 %		-20	1745 000 001	-3.7	0.000 000	-0.002
100 %		-10	1745 000 001	-3.1	0.000 000	-0.002
100 %		0	1745 000 002	-2.4	0.000 000	-0.001
100 %		+10	1745 000 003	-1.9	0.000 000	-0.001
100 %		+30	1745 000 002	-2.9	0.000 000	-0.002
100 %		+40	1745 000 008	3.9	0.000 000	0.002
100 %		+50	1745 000 000	-4.3	0.000 000	-0.002
Batt. Endpoint	3.400	+20	1745 000 008	3.7	0.000 000	0.002



▣ MODE: LTE 66/4

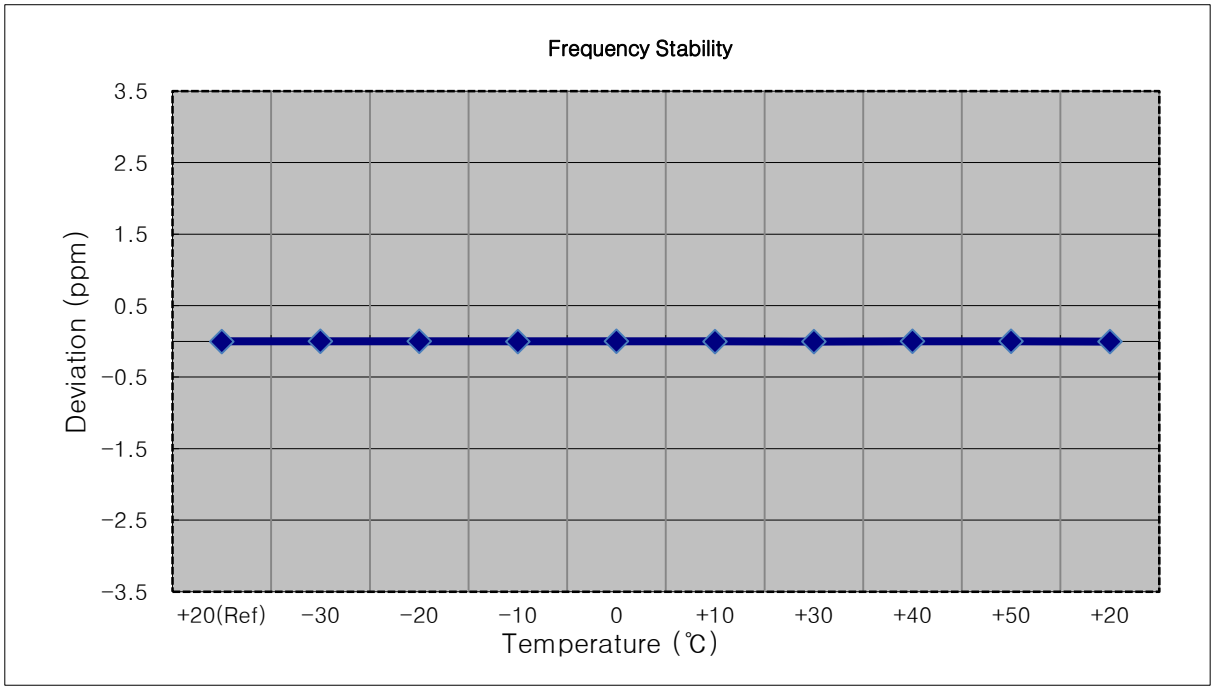
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (10 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1744 999 997	0.0	0.000 000	0.000
100 %		-30	1744 999 999	2.1	0.000 000	0.001
100 %		-20	1744 999 999	2.8	0.000 000	0.002
100 %		-10	1744 999 995	-1.7	0.000 000	-0.001
100 %		0	1744 999 999	2.4	0.000 000	0.001
100 %		+10	1744 999 995	-2.0	0.000 000	-0.001
100 %		+30	1744 999 993	-3.7	0.000 000	-0.002
100 %		+40	1744 999 999	2.0	0.000 000	0.001
100 %		+50	1745 000 000	2.9	0.000 000	0.002
Batt. Endpoint	3.400	+20	1744 999 994	-2.4	0.000 000	-0.001



▣ MODE: LTE 66/4

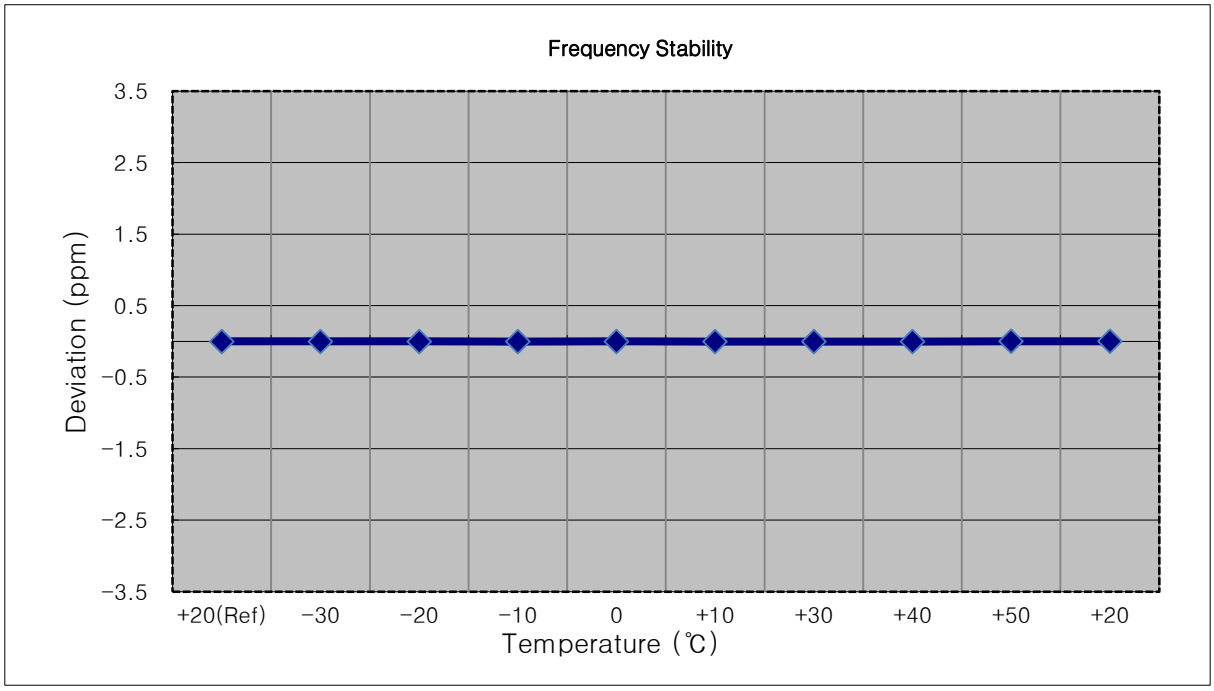
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (15 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1745 000 003	0.0	0.000 000	0.000
100 %		-30	1745 000 005	1.8	0.000 000	0.001
100 %		-20	1745 000 001	-1.7	0.000 000	-0.001
100 %		-10	1745 000 000	-3.1	0.000 000	-0.002
100 %		0	1745 000 001	-2.0	0.000 000	-0.001
100 %		+10	1745 000 000	-2.4	0.000 000	-0.001
100 %		+30	1744 999 998	-5.0	0.000 000	-0.003
100 %		+40	1745 000 000	-2.5	0.000 000	-0.001
100 %		+50	1745 000 005	2.6	0.000 000	0.001
Batt. Endpoint	3.400	+20	1745 000 006	2.8	0.000 000	0.002



▣ MODE: LTE 66/4

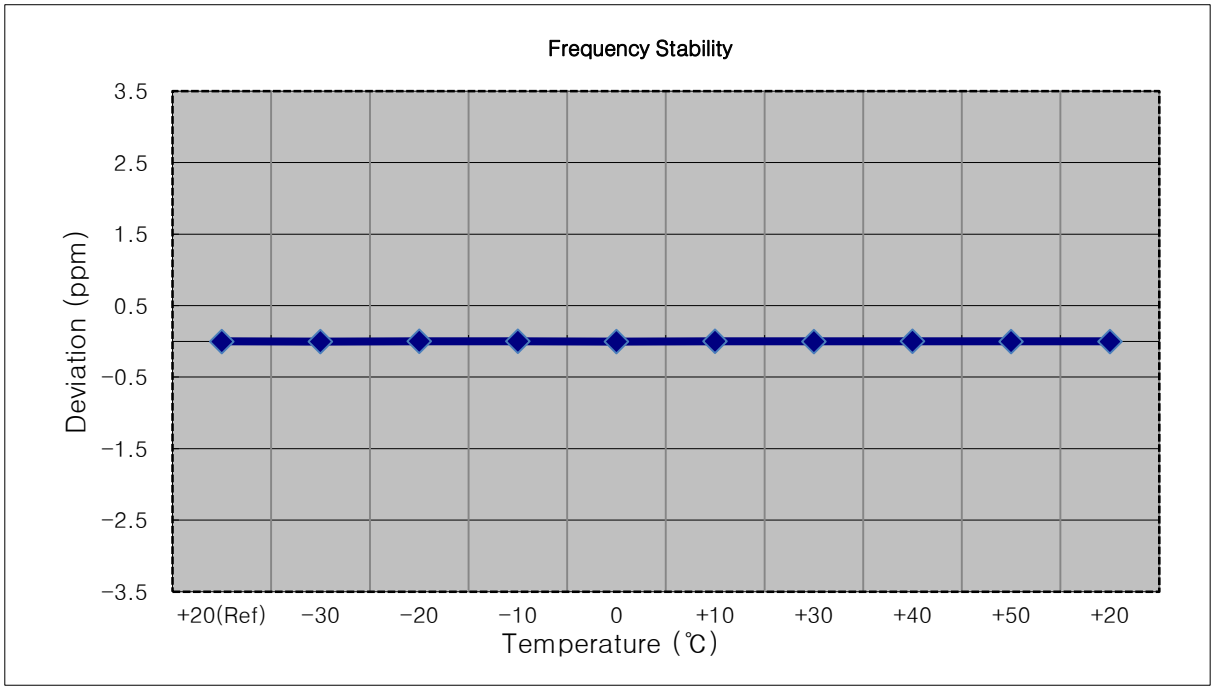
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (20 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1744 999 997	0.0	0.000 000	0.000
100 %		-30	1744 999 993	-3.8	0.000 000	-0.002
100 %		-20	1744 999 999	2.1	0.000 000	0.001
100 %		-10	1745 000 000	2.8	0.000 000	0.002
100 %		0	1744 999 994	-3.6	0.000 000	-0.002
100 %		+10	1745 000 000	2.7	0.000 000	0.002
100 %		+30	1744 999 996	-1.7	0.000 000	-0.001
100 %		+40	1744 999 999	2.1	0.000 000	0.001
100 %		+50	1744 999 999	1.3	0.000 000	0.001
Batt. Endpoint	3.400	+20	1744 999 995	-2.0	0.000 000	-0.001



▣ MODE: LTE 66/4

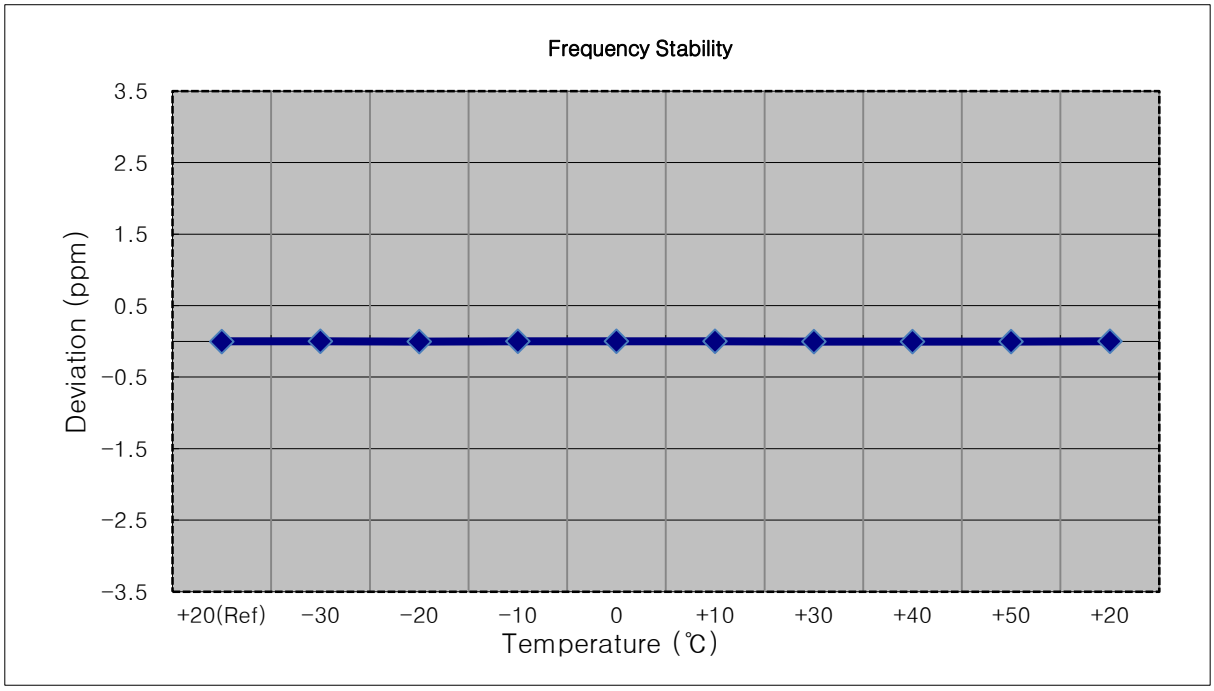
▣ OPERATING FREQUENCY: 1779,300,000 Hz

▣ CHANNEL: 132665 (1.4 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1779 300 004	0.0	0.000 000	0.000
100 %		-30	1779 300 006	2.6	0.000 000	0.001
100 %		-20	1779 300 001	-2.3	0.000 000	-0.001
100 %		-10	1779 300 006	2.2	0.000 000	0.001
100 %		0	1779 300 007	3.0	0.000 000	0.002
100 %		+10	1779 300 009	5.0	0.000 000	0.003
100 %		+30	1779 300 001	-2.5	0.000 000	-0.001
100 %		+40	1779 300 001	-2.4	0.000 000	-0.001
100 %		+50	1779 300 001	-3.2	0.000 000	-0.002
Batt. Endpoint	3.400	+20	1779 300 008	3.9	0.000 000	0.002



▣ MODE: LTE 66/4

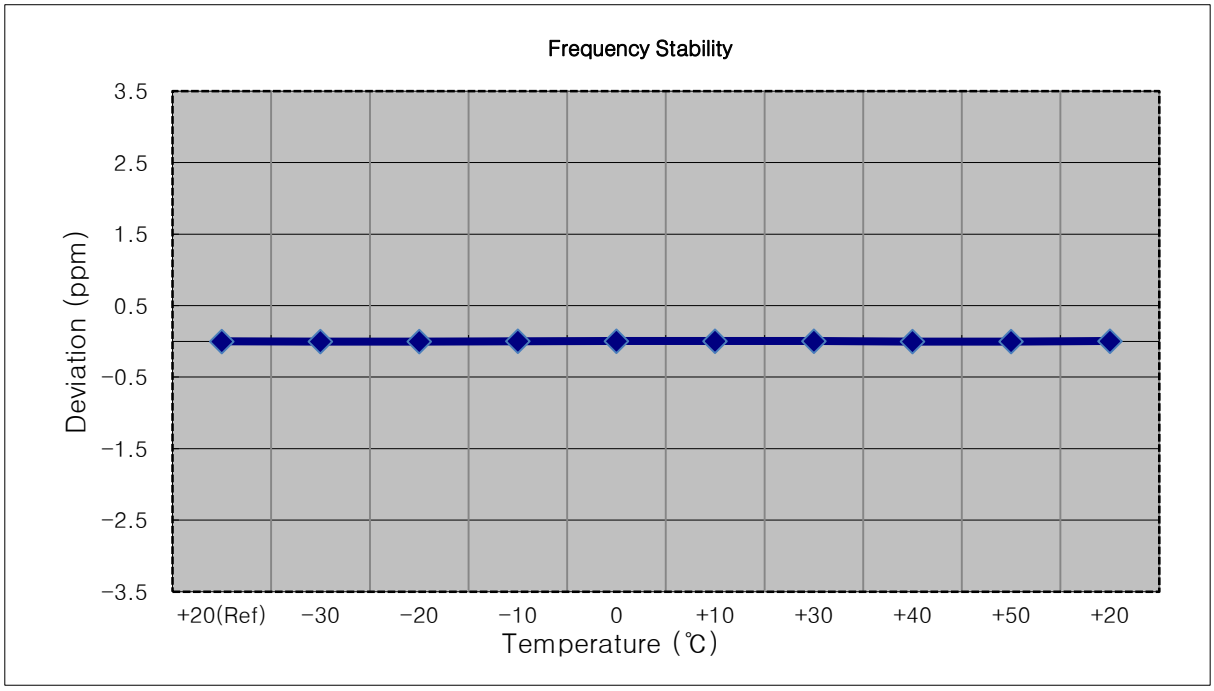
▣ OPERATING FREQUENCY: 1778,500,000 Hz

▣ CHANNEL: 132657 (3 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1778 499 992	0.0	0.000 000	0.000
100 %		-30	1778 499 987	-5.5	0.000 000	-0.003
100 %		-20	1778 499 987	-5.2	0.000 000	-0.003
100 %		-10	1778 499 998	5.5	0.000 000	0.003
100 %		0	1778 499 999	6.4	0.000 000	0.004
100 %		+10	1778 499 999	7.0	0.000 000	0.004
100 %		+30	1778 500 000	7.9	0.000 000	0.004
100 %		+40	1778 499 987	-5.8	0.000 000	-0.003
100 %		+50	1778 499 989	-3.6	0.000 000	-0.002
Batt. Endpoint	3.400	+20	1778 499 999	6.6	0.000 000	0.004



▣ MODE: LTE 66/4

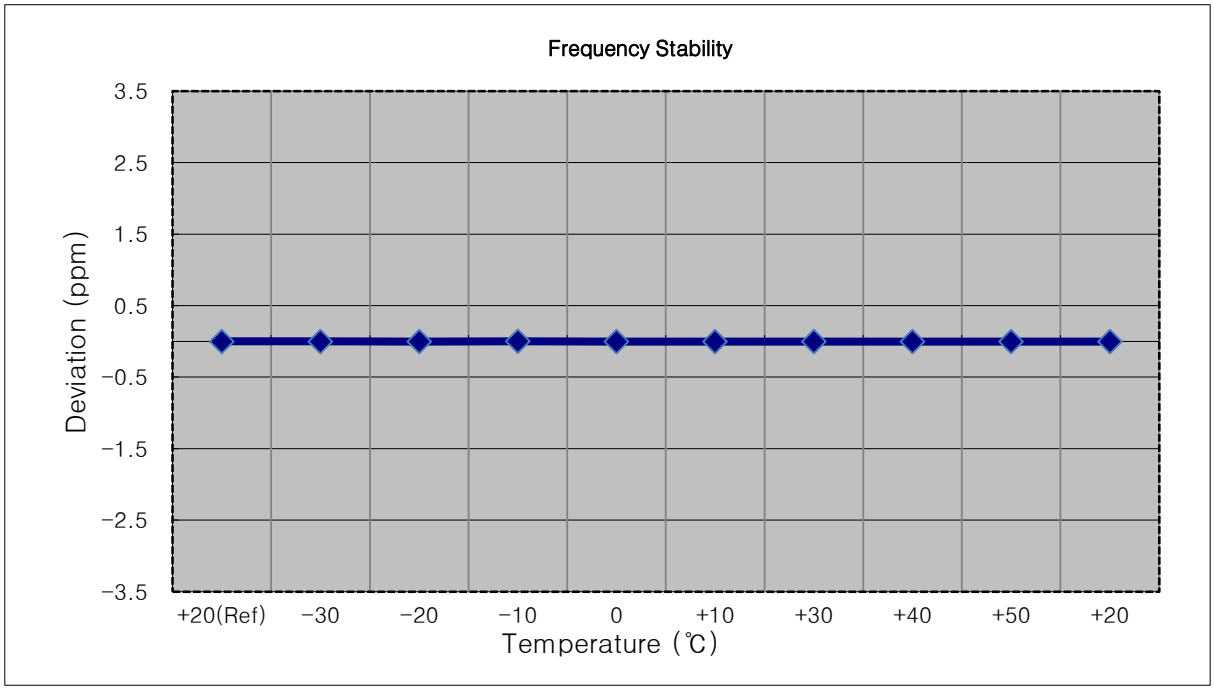
▣ OPERATING FREQUENCY: 1777,500,000 Hz

▣ CHANNEL: 132647 (5 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1777 499 998	0.0	0.000 000	0.000
100 %		-30	1777 499 999	1.8	0.000 000	0.001
100 %		-20	1777 499 994	-3.4	0.000 000	-0.002
100 %		-10	1777 500 000	2.9	0.000 000	0.002
100 %		0	1777 499 994	-3.7	0.000 000	-0.002
100 %		+10	1777 499 994	-3.6	0.000 000	-0.002
100 %		+30	1777 499 995	-2.4	0.000 000	-0.001
100 %		+40	1777 499 995	-2.4	0.000 000	-0.001
100 %		+50	1777 499 993	-5.0	0.000 000	-0.003
Batt. Endpoint	3.400	+20	1777 499 994	-3.3	0.000 000	-0.002



▣ MODE: LTE 66/4

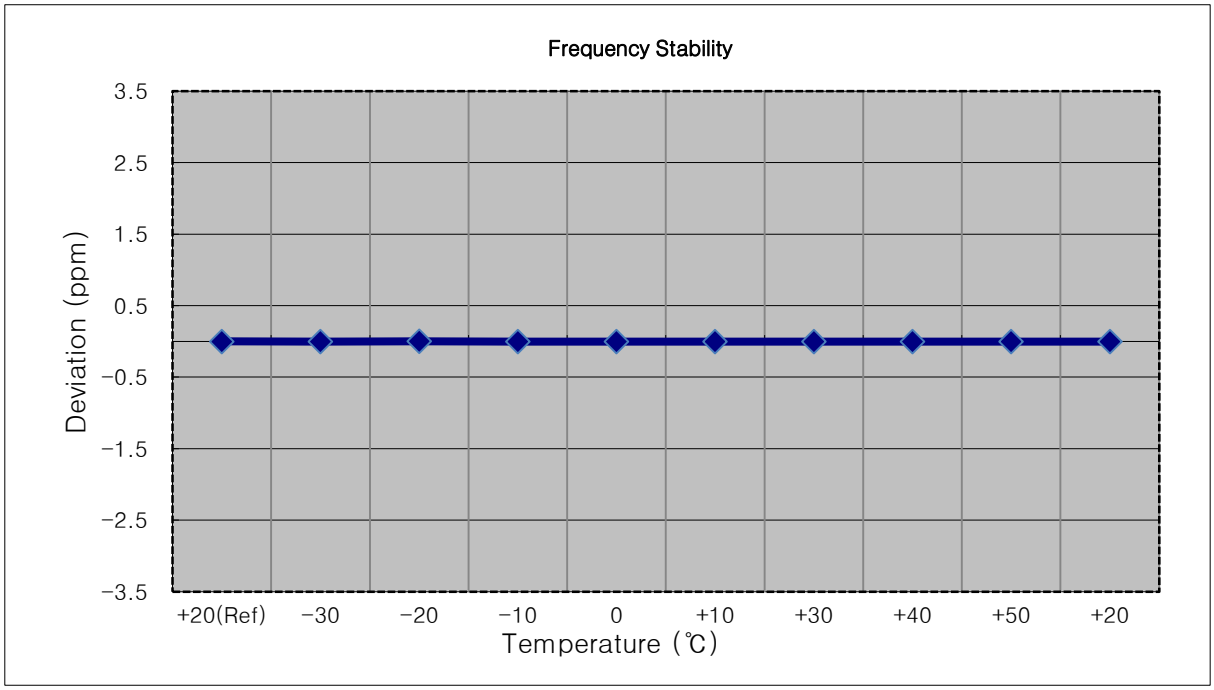
▣ OPERATING FREQUENCY: 1775,000,000 Hz

▣ CHANNEL: 132622 (10 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1774 999 998	0.0	0.000 000	0.000
100 %		-30	1774 999 995	-2.8	0.000 000	-0.002
100 %		-20	1775 000 001	3.6	0.000 000	0.002
100 %		-10	1774 999 994	-3.8	0.000 000	-0.002
100 %		0	1774 999 994	-4.0	0.000 000	-0.002
100 %		+10	1774 999 995	-3.3	0.000 000	-0.002
100 %		+30	1774 999 994	-3.8	0.000 000	-0.002
100 %		+40	1774 999 992	-5.5	0.000 000	-0.003
100 %		+50	1774 999 994	-4.2	0.000 000	-0.002
Batt. Endpoint	3.400	+20	1774 999 993	-4.5	0.000 000	-0.003



▣ MODE: LTE 66/4

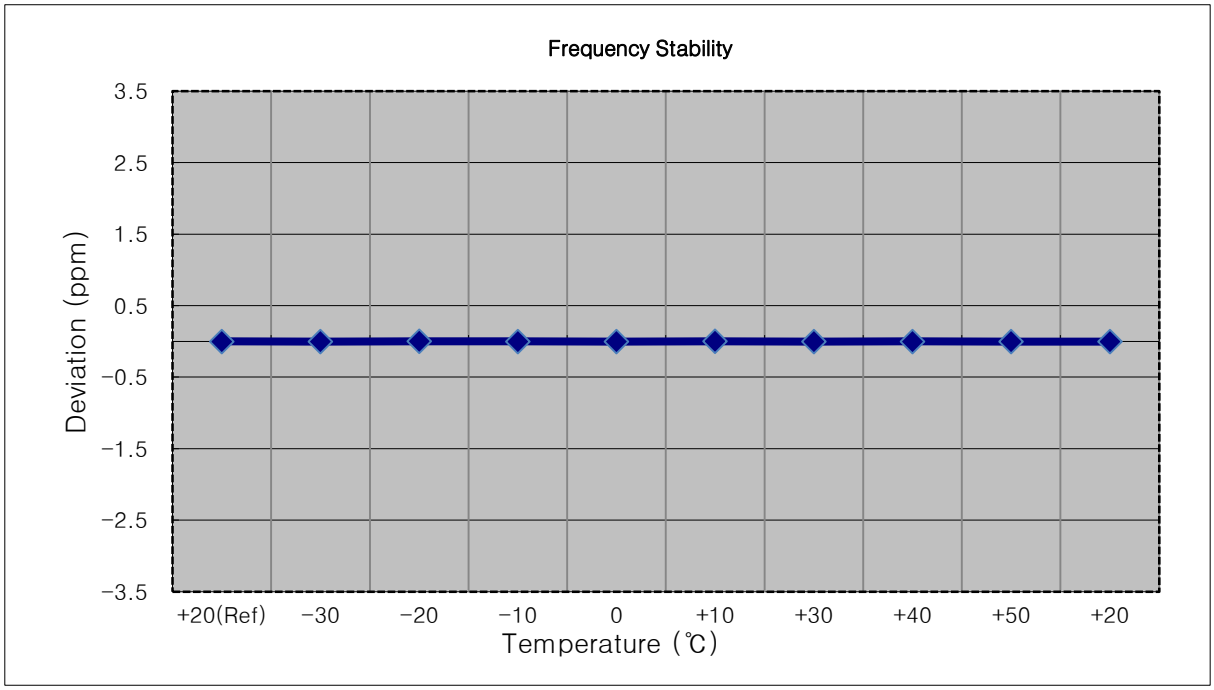
▣ OPERATING FREQUENCY: 1772,500,000 Hz

▣ CHANNEL: 132597 (15 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1772 500 002	0.0	0.000 000	0.000
100 %		-30	1772 500 000	-2.2	0.000 000	-0.001
100 %		-20	1772 500 006	3.1	0.000 000	0.002
100 %		-10	1772 500 004	1.9	0.000 000	0.001
100 %		0	1772 500 000	-2.5	0.000 000	-0.001
100 %		+10	1772 500 005	2.4	0.000 000	0.001
100 %		+30	1772 500 000	-2.3	0.000 000	-0.001
100 %		+40	1772 500 004	1.7	0.000 000	0.001
100 %		+50	1772 499 999	-3.2	0.000 000	-0.002
Batt. Endpoint	3.400	+20	1772 500 000	-2.8	0.000 000	-0.002



▣ MODE: LTE 66/4

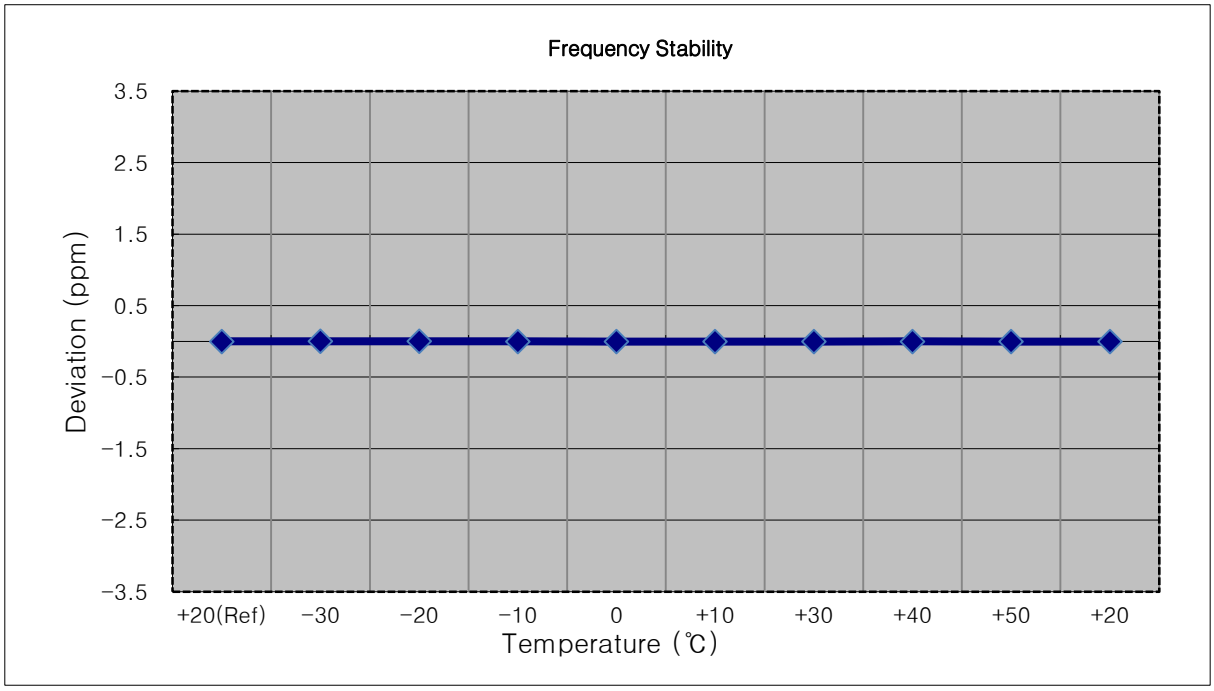
▣ OPERATING FREQUENCY: 1770,000,000 Hz

▣ CHANNEL: 132572 (20 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1770 000 004	0.0	0.000 000	0.000
100 %		-30	1770 000 006	2.8	0.000 000	0.002
100 %		-20	1770 000 006	2.9	0.000 000	0.002
100 %		-10	1770 000 002	-1.6	0.000 000	-0.001
100 %		0	1770 000 001	-2.7	0.000 000	-0.002
100 %		+10	1769 999 999	-4.2	0.000 000	-0.002
100 %		+30	1770 000 001	-2.2	0.000 000	-0.001
100 %		+40	1770 000 005	1.9	0.000 000	0.001
100 %		+50	1770 000 001	-2.6	0.000 000	-0.001
Batt. Endpoint	3.400	+20	1770 000 001	-2.3	0.000 000	-0.001



8.7.2 Sub2 Ant

▣ MODE: LTE 66

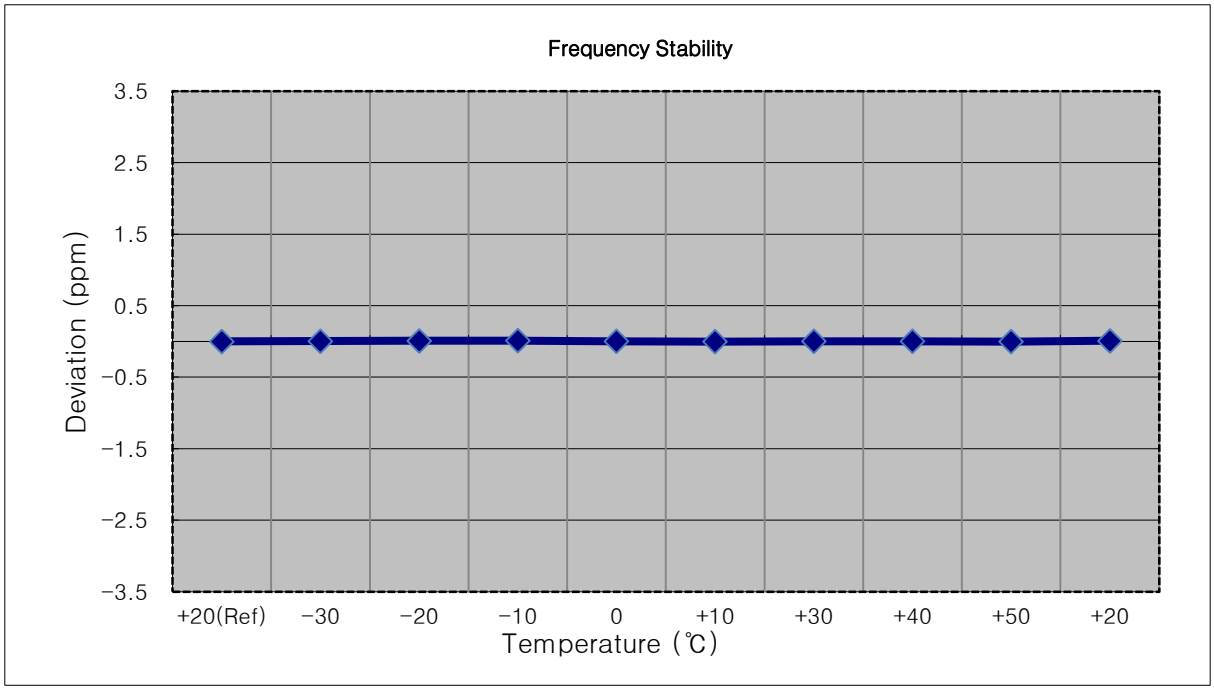
▣ OPERATING FREQUENCY: 1710,700,000 Hz

▣ CHANNEL: 131979 (1.4 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1710 700 003	0.0	0.000 000	0.000
100 %		-30	1710 700 012	8.7	0.000 001	0.005
100 %		-20	1710 700 017	13.9	0.000 001	0.008
100 %		-10	1710 700 020	17.5	0.000 001	0.010
100 %		0	1710 700 008	5.1	0.000 000	0.003
100 %		+10	1710 700 000	-2.9	0.000 000	-0.002
100 %		+30	1710 700 005	2.5	0.000 000	0.001
100 %		+40	1710 700 008	5.3	0.000 000	0.003
100 %		+50	1710 700 001	-2.3	0.000 000	-0.001
Batt. Endpoint	3.400	+20	1710 700 017	13.9	0.000 001	0.008



▣ MODE: LTE 66

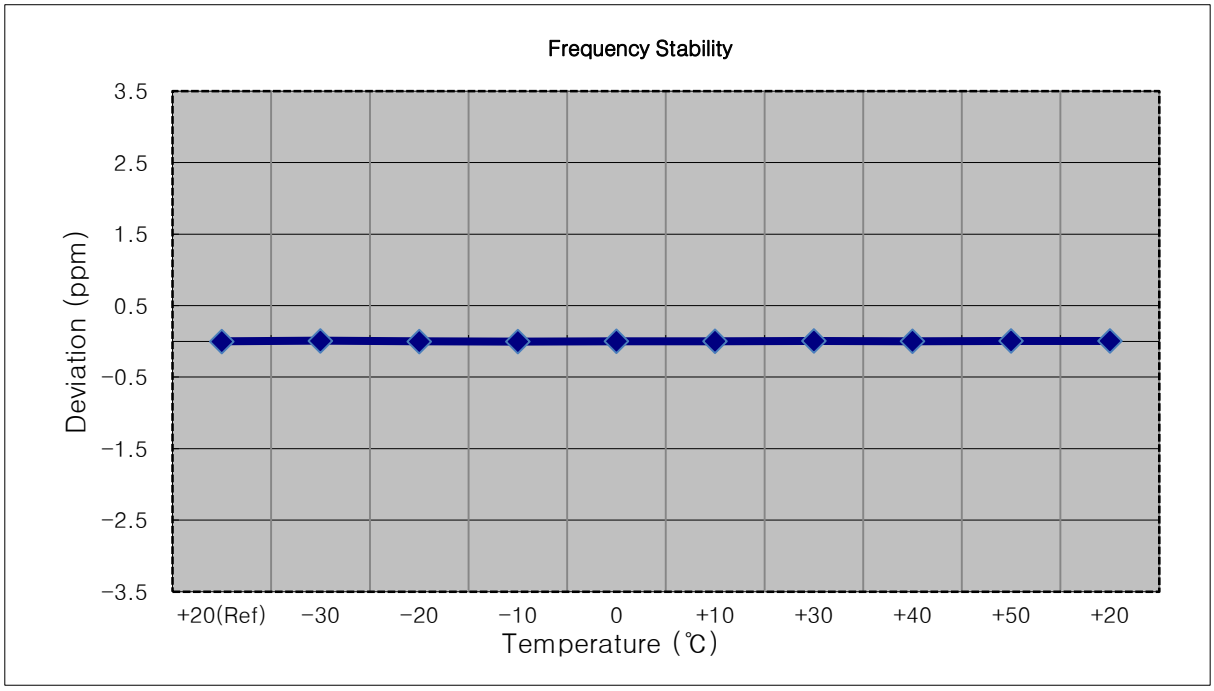
▣ OPERATING FREQUENCY: 1711,500,000 Hz

▣ CHANNEL: 131987 (3 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1711 499 997	0.0	0.000 000	0.000
100 %		-30	1711 500 013	15.9	0.000 001	0.009
100 %		-20	1711 499 997	-0.3	0.000 000	0.000
100 %		-10	1711 499 995	-2.8	0.000 000	-0.002
100 %		0	1711 500 001	3.5	0.000 000	0.002
100 %		+10	1711 500 002	4.2	0.000 000	0.002
100 %		+30	1711 500 009	11.9	0.000 001	0.007
100 %		+40	1711 500 000	3.0	0.000 000	0.002
100 %		+50	1711 500 010	13.0	0.000 001	0.008
Batt. Endpoint	3.400	+20	1711 500 008	10.7	0.000 001	0.006



▣ MODE: LTE 66

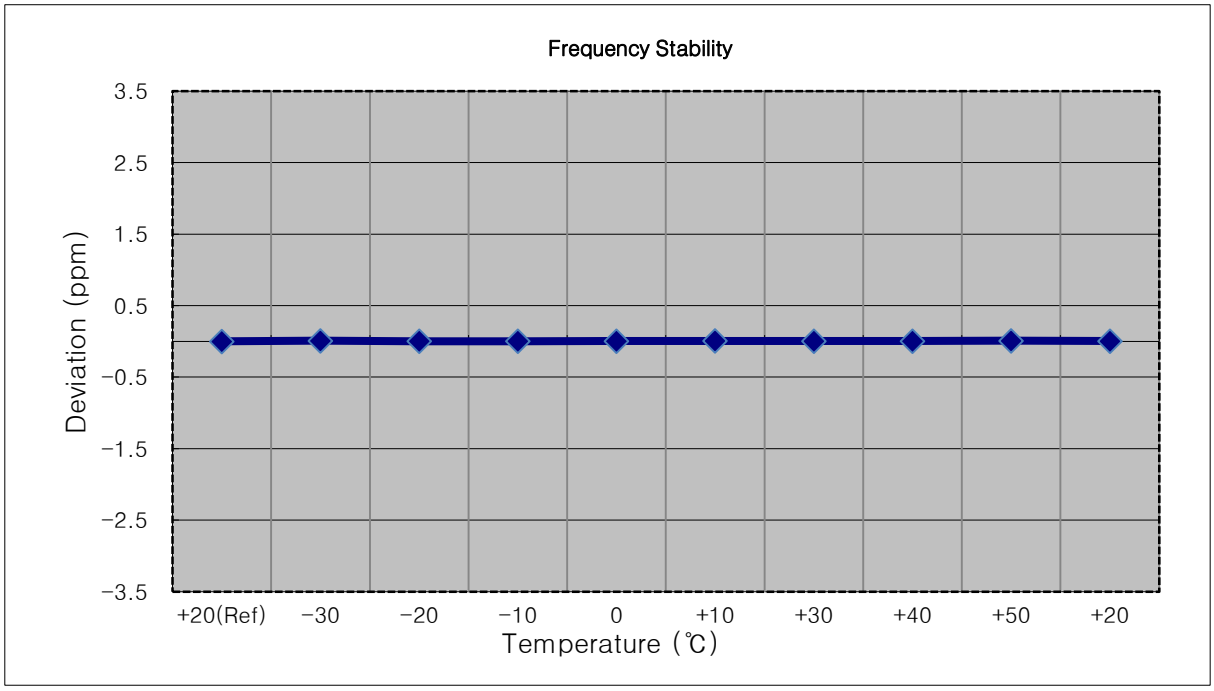
▣ OPERATING FREQUENCY: 1712,500,000 Hz

▣ CHANNEL: 131997 (5 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1712 500 013	0.0	0.000 000	0.000
100 %		-30	1712 500 028	15.8	0.000 001	0.009
100 %		-20	1712 500 016	3.6	0.000 000	0.002
100 %		-10	1712 500 017	4.6	0.000 000	0.003
100 %		0	1712 500 018	5.8	0.000 000	0.003
100 %		+10	1712 500 025	12.5	0.000 001	0.007
100 %		+30	1712 500 022	9.5	0.000 001	0.006
100 %		+40	1712 500 022	9.1	0.000 001	0.005
100 %		+50	1712 500 027	14.4	0.000 001	0.008
Batt. Endpoint	3.400	+20	1712 500 020	7.0	0.000 000	0.004



▣ MODE: LTE 66

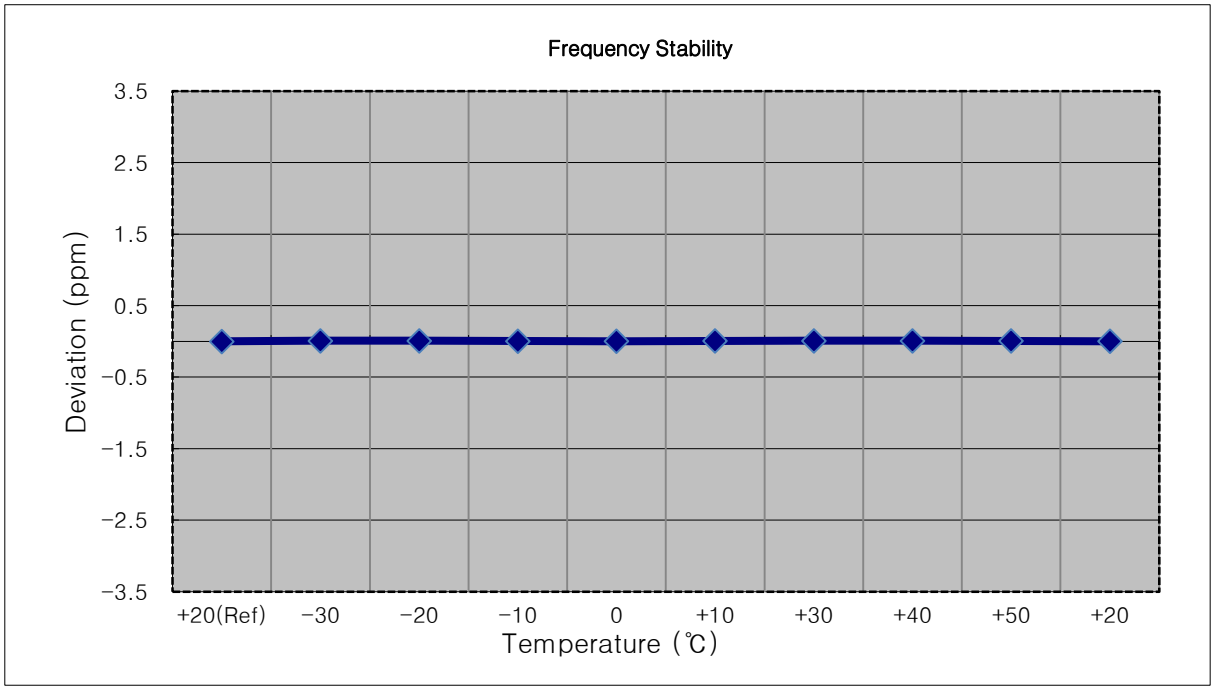
▣ OPERATING FREQUENCY: 1715,000,000 Hz

▣ CHANNEL: 132022 (10 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1715 000 006	0.0	0.000 000	0.000
100 %		-30	1715 000 020	14.2	0.000 001	0.008
100 %		-20	1715 000 022	16.0	0.000 001	0.009
100 %		-10	1715 000 014	8.2	0.000 000	0.005
100 %		0	1715 000 009	3.1	0.000 000	0.002
100 %		+10	1715 000 017	11.4	0.000 001	0.007
100 %		+30	1715 000 022	16.1	0.000 001	0.009
100 %		+40	1715 000 019	13.7	0.000 001	0.008
100 %		+50	1715 000 018	12.4	0.000 001	0.007
Batt. Endpoint	3.400	+20	1715 000 008	2.3	0.000 000	0.001



▣ MODE: LTE 66

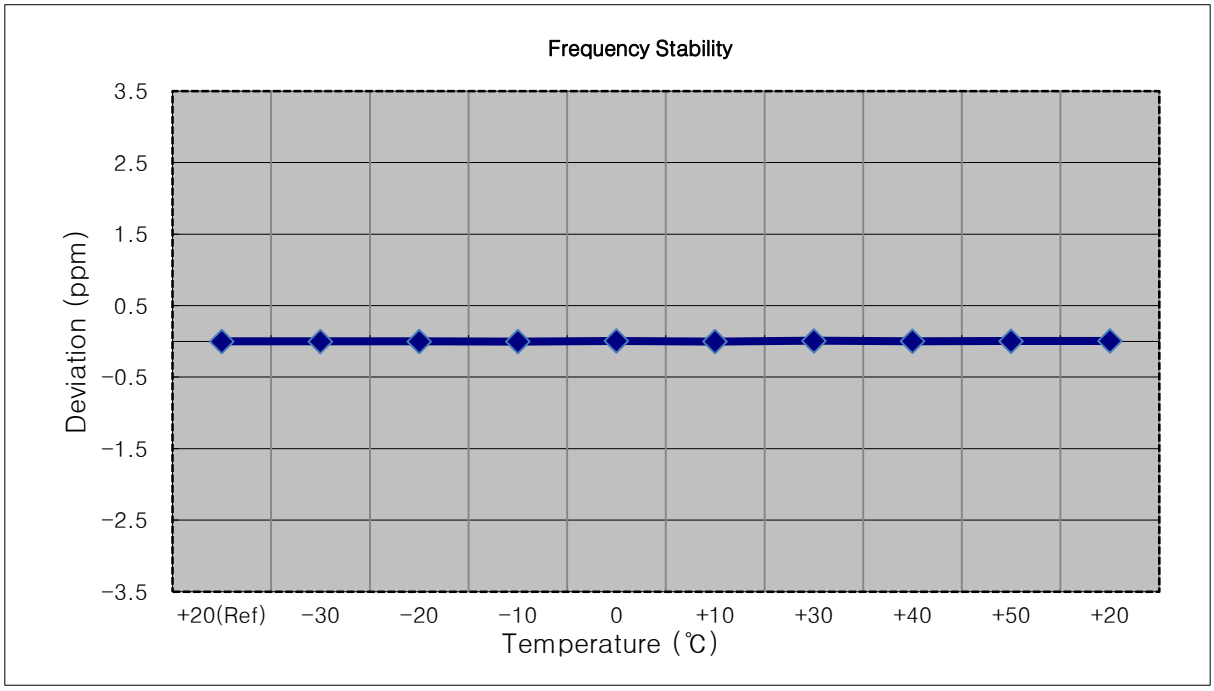
▣ OPERATING FREQUENCY: 1717,500,000 Hz

▣ CHANNEL: 132047 (15 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1717 500 005	0.0	0.000 000	0.000
100 %		-30	1717 500 006	0.9	0.000 000	0.001
100 %		-20	1717 500 007	1.5	0.000 000	0.001
100 %		-10	1717 500 002	-3.5	0.000 000	-0.002
100 %		0	1717 500 017	12.2	0.000 001	0.007
100 %		+10	1717 500 002	-2.9	0.000 000	-0.002
100 %		+30	1717 500 022	16.6	0.000 001	0.010
100 %		+40	1717 500 009	3.8	0.000 000	0.002
100 %		+50	1717 500 012	7.0	0.000 000	0.004
Batt. Endpoint	3.400	+20	1717 500 018	12.7	0.000 001	0.007



▣ MODE: LTE 66

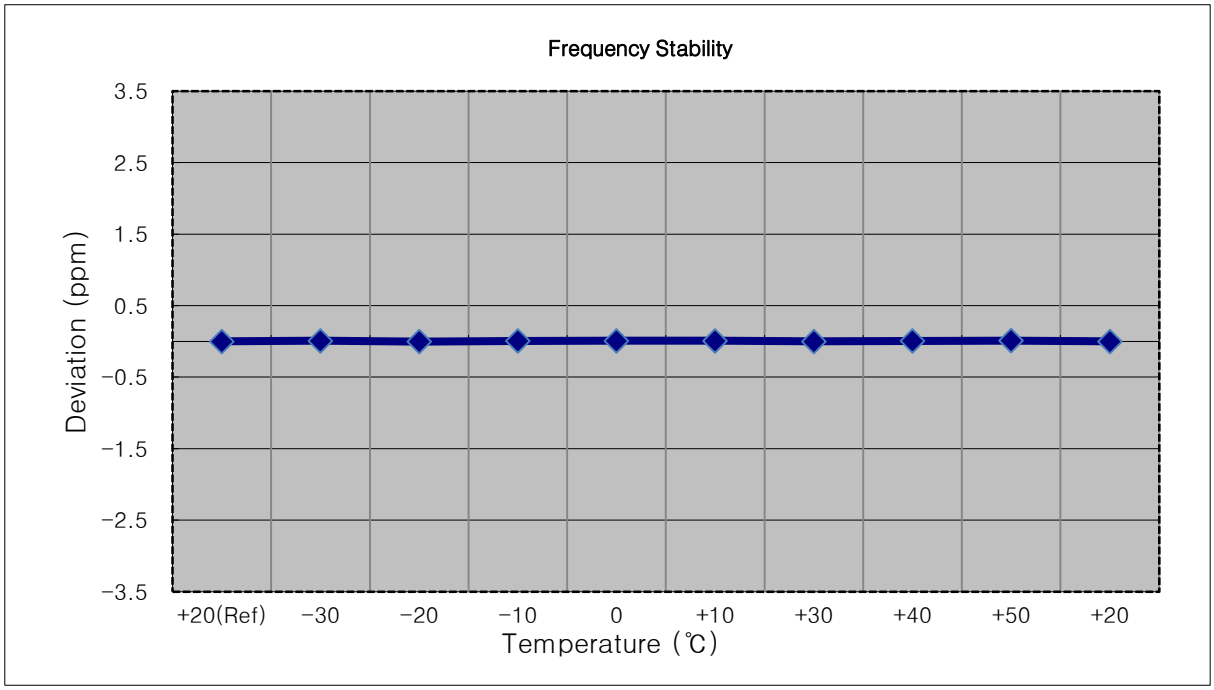
▣ OPERATING FREQUENCY: 1720,000,000 Hz

▣ CHANNEL: 132072 (20 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1720 000 017	0.0	0.000 000	0.000
100 %		-30	1720 000 030	13.7	0.000 001	0.008
100 %		-20	1720 000 015	-2.1	0.000 000	-0.001
100 %		-10	1720 000 030	13.1	0.000 001	0.008
100 %		0	1720 000 030	13.6	0.000 001	0.008
100 %		+10	1720 000 032	14.9	0.000 001	0.009
100 %		+30	1720 000 018	1.2	0.000 000	0.001
100 %		+40	1720 000 030	12.9	0.000 001	0.007
100 %		+50	1720 000 034	17.4	0.000 001	0.010
Batt. Endpoint	3.400	+20	1720 000 018	1.1	0.000 000	0.001



▣ MODE: LTE 66

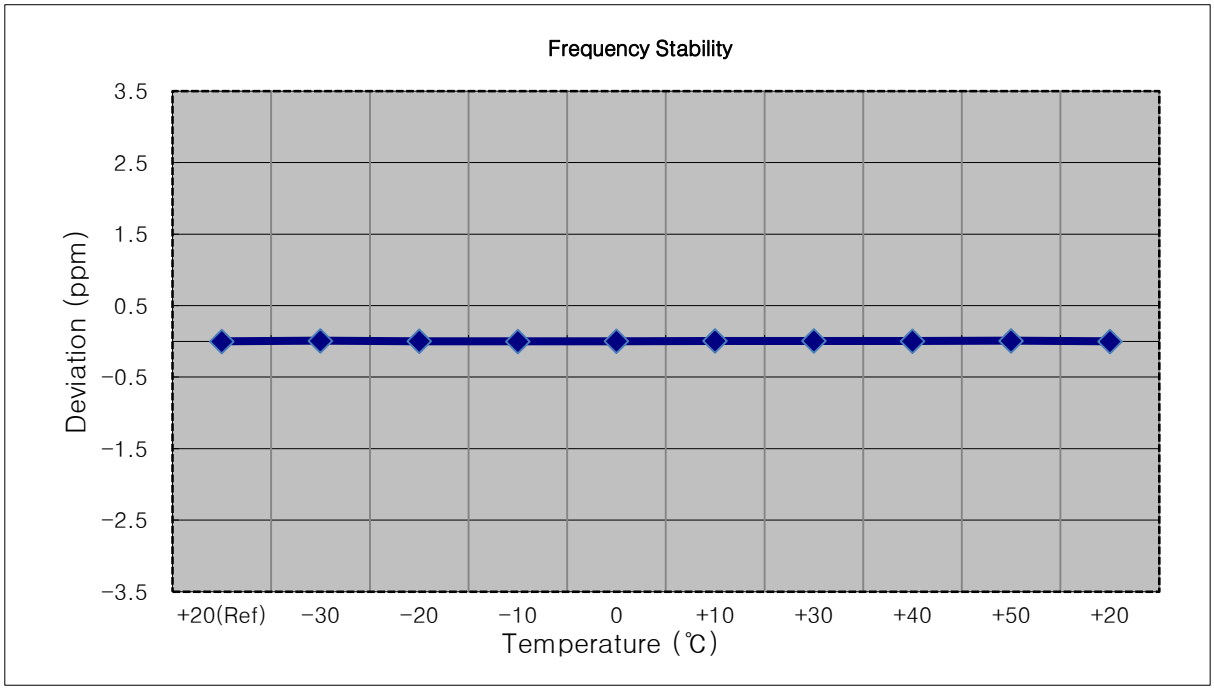
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (1.4 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1745 000 017	0.0	0.000 000	0.000
100 %		-30	1745 000 032	14.2	0.000 001	0.008
100 %		-20	1745 000 020	3.0	0.000 000	0.002
100 %		-10	1745 000 016	-1.6	0.000 000	-0.001
100 %		0	1745 000 021	4.0	0.000 000	0.002
100 %		+10	1745 000 028	11.2	0.000 001	0.006
100 %		+30	1745 000 028	10.9	0.000 001	0.006
100 %		+40	1745 000 027	9.3	0.000 001	0.005
100 %		+50	1745 000 031	14.1	0.000 001	0.008
Batt. Endpoint	3.400	+20	1745 000 018	0.8	0.000 000	0.000



▣ MODE: LTE 66

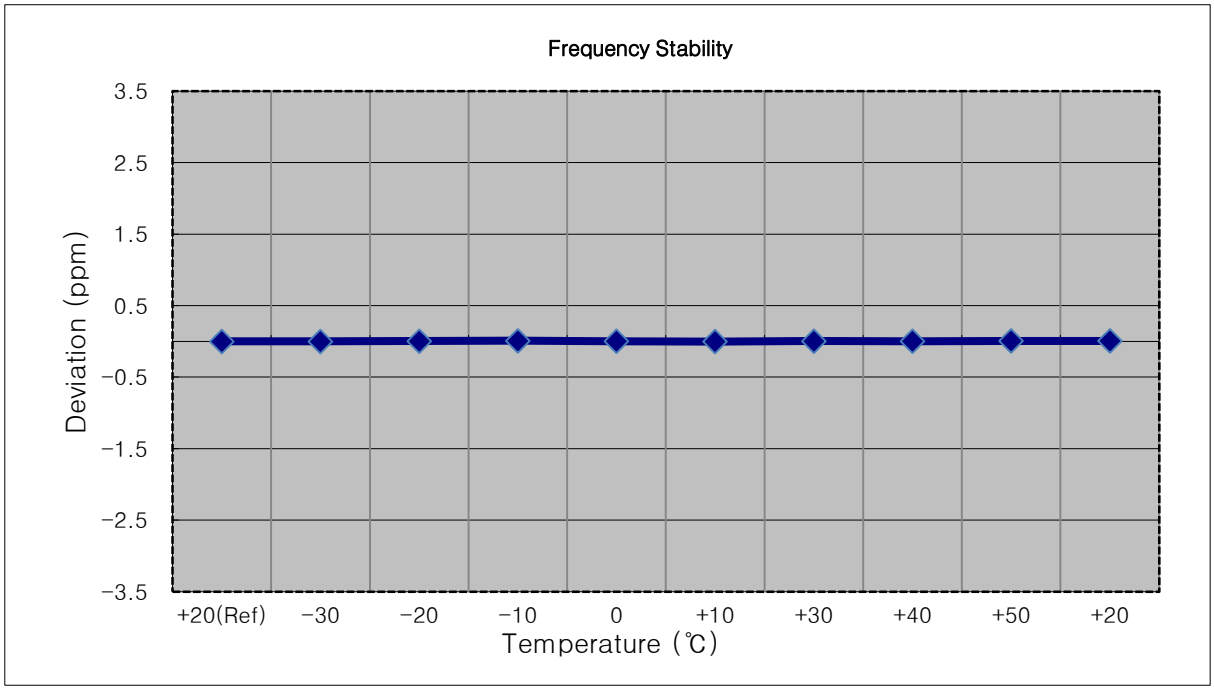
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (3 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1745 000 010	0.0	0.000 000	0.000
100 %		-30	1745 000 009	-0.7	0.000 000	0.000
100 %		-20	1745 000 018	8.9	0.000 001	0.005
100 %		-10	1745 000 024	14.0	0.000 001	0.008
100 %		0	1745 000 013	3.9	0.000 000	0.002
100 %		+10	1745 000 007	-3.0	0.000 000	-0.002
100 %		+30	1745 000 018	8.8	0.000 001	0.005
100 %		+40	1745 000 012	2.0	0.000 000	0.001
100 %		+50	1745 000 021	11.4	0.000 001	0.007
Batt. Endpoint	3.400	+20	1745 000 021	11.0	0.000 001	0.006



▣ MODE: LTE 66

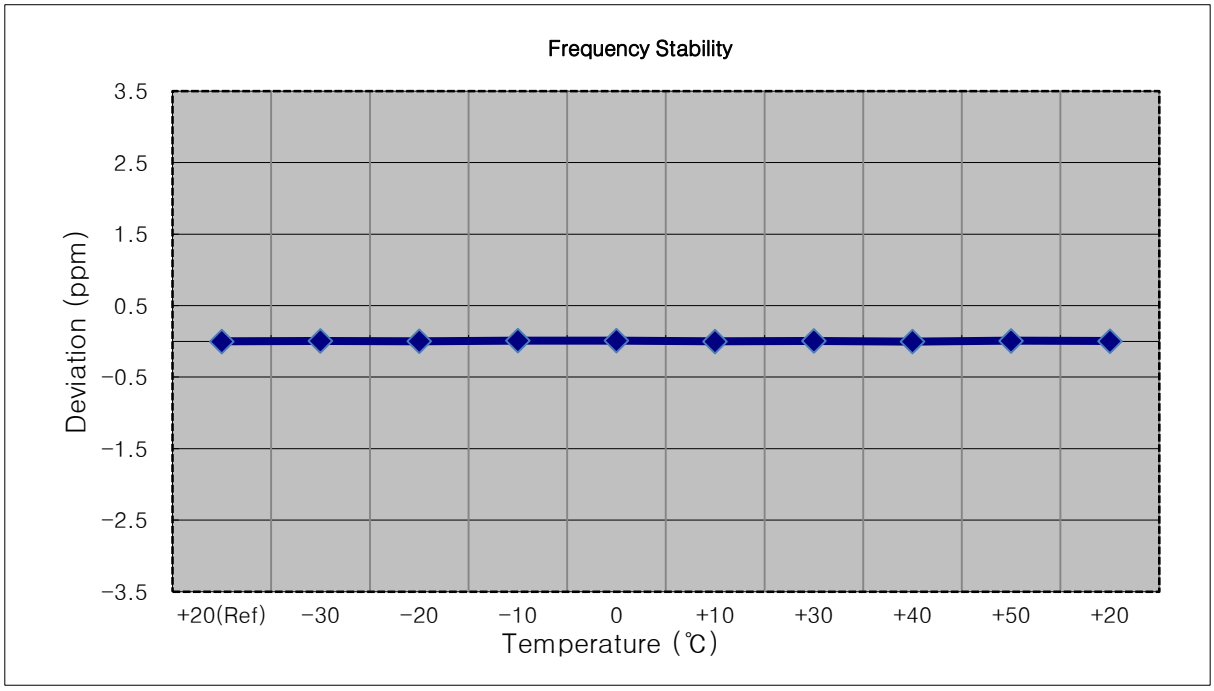
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (5 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1745 000 012	0.0	0.000 000	0.000
100 %		-30	1745 000 023	11.0	0.000 001	0.006
100 %		-20	1745 000 014	2.1	0.000 000	0.001
100 %		-10	1745 000 029	17.7	0.000 001	0.010
100 %		0	1745 000 030	17.8	0.000 001	0.010
100 %		+10	1745 000 013	0.9	0.000 000	0.001
100 %		+30	1745 000 022	10.4	0.000 001	0.006
100 %		+40	1745 000 009	-2.5	0.000 000	-0.001
100 %		+50	1745 000 028	16.5	0.000 001	0.009
Batt. Endpoint	3.400	+20	1745 000 020	8.3	0.000 000	0.005



▣ MODE: LTE 66

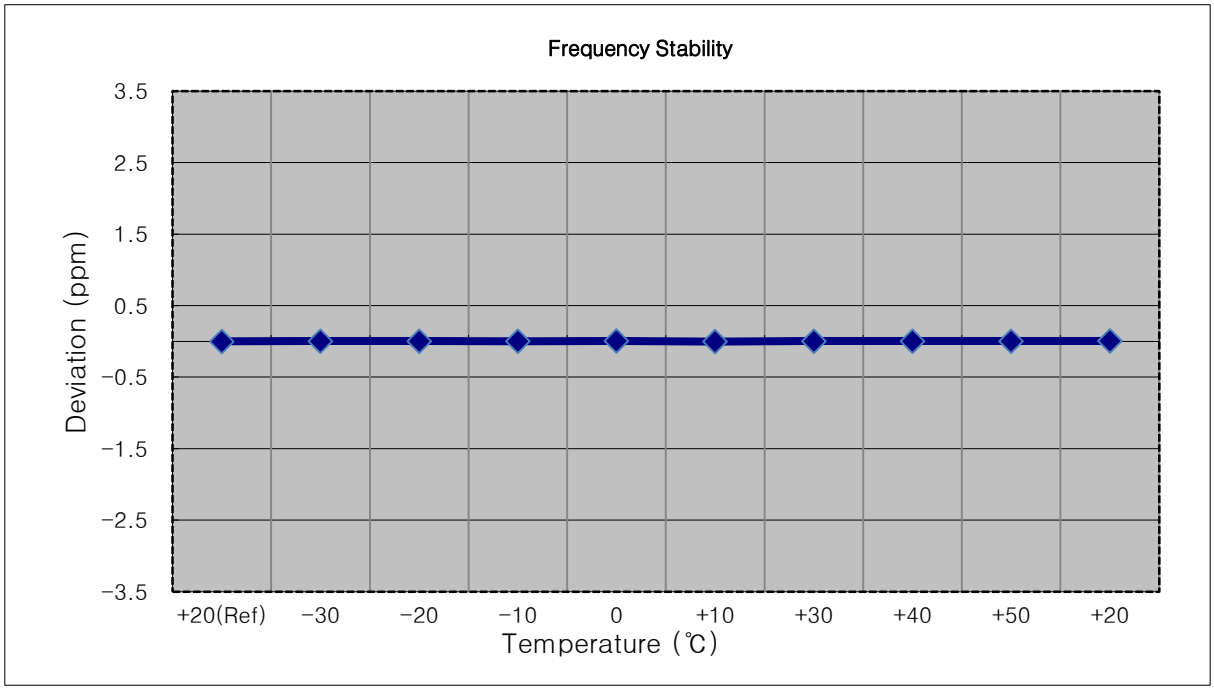
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (10 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1744 999 996	0.0	0.000 000	0.000
100 %		-30	1745 000 004	7.2	0.000 000	0.004
100 %		-20	1745 000 002	5.9	0.000 000	0.003
100 %		-10	1744 999 999	2.9	0.000 000	0.002
100 %		0	1745 000 006	9.9	0.000 001	0.006
100 %		+10	1744 999 993	-3.6	0.000 000	-0.002
100 %		+30	1745 000 006	9.6	0.000 001	0.006
100 %		+40	1745 000 004	8.0	0.000 000	0.005
100 %		+50	1745 000 005	8.3	0.000 000	0.005
Batt. Endpoint	3.400	+20	1745 000 006	10.1	0.000 001	0.006



▣ MODE: LTE 66

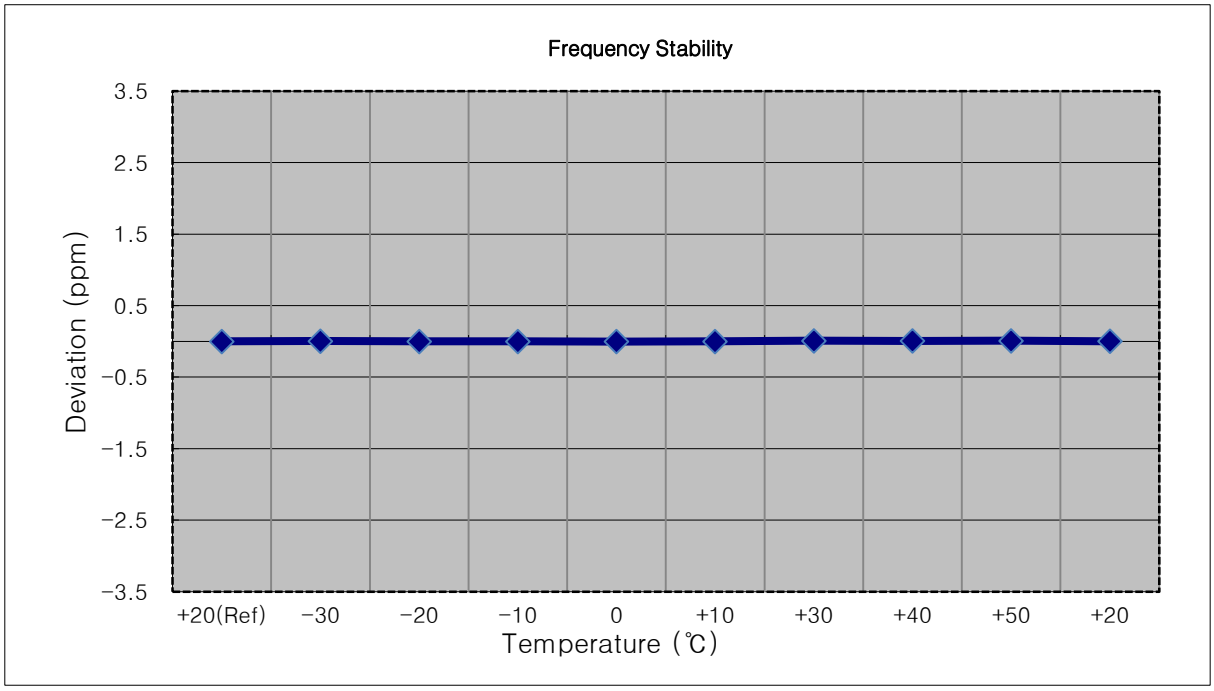
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (15 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1745 000 016	0.0	0.000 000	0.000
100 %		-30	1745 000 024	7.4	0.000 000	0.004
100 %		-20	1745 000 015	-1.1	0.000 000	-0.001
100 %		-10	1745 000 016	-0.6	0.000 000	0.000
100 %		0	1745 000 013	-3.1	0.000 000	-0.002
100 %		+10	1745 000 016	-0.3	0.000 000	0.000
100 %		+30	1745 000 031	15.0	0.000 001	0.009
100 %		+40	1745 000 027	10.2	0.000 001	0.006
100 %		+50	1745 000 034	17.5	0.000 001	0.010
Batt. Endpoint	3.400	+20	1745 000 019	2.4	0.000 000	0.001



▣ MODE: LTE 66

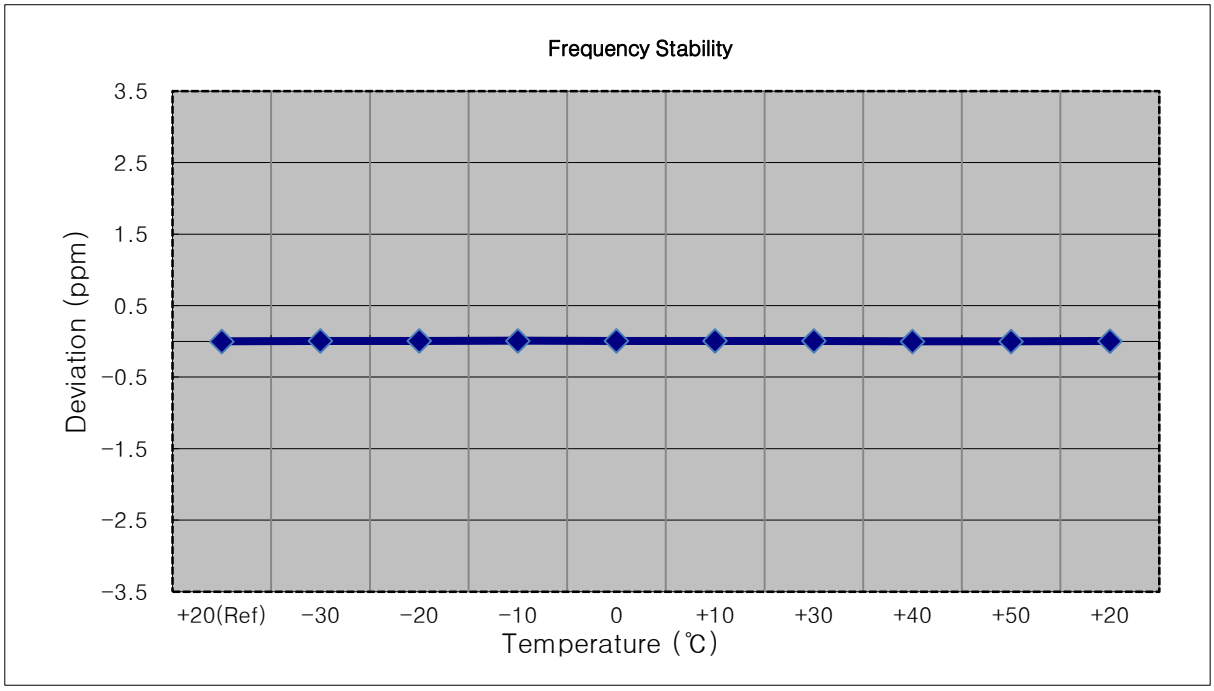
▣ OPERATING FREQUENCY: 1745,000,000 Hz

▣ CHANNEL: 132322 (20 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1745 000 006	0.0	0.000 000	0.000
100 %		-30	1745 000 019	12.8	0.000 001	0.007
100 %		-20	1745 000 016	9.7	0.000 001	0.006
100 %		-10	1745 000 020	13.8	0.000 001	0.008
100 %		0	1745 000 019	13.0	0.000 001	0.007
100 %		+10	1745 000 018	12.4	0.000 001	0.007
100 %		+30	1745 000 018	11.9	0.000 001	0.007
100 %		+40	1745 000 006	0.0	0.000 000	0.000
100 %		+50	1745 000 006	-0.6	0.000 000	0.000
Batt. Endpoint	3.400	+20	1745 000 013	6.4	0.000 000	0.004



▣ MODE: LTE 66

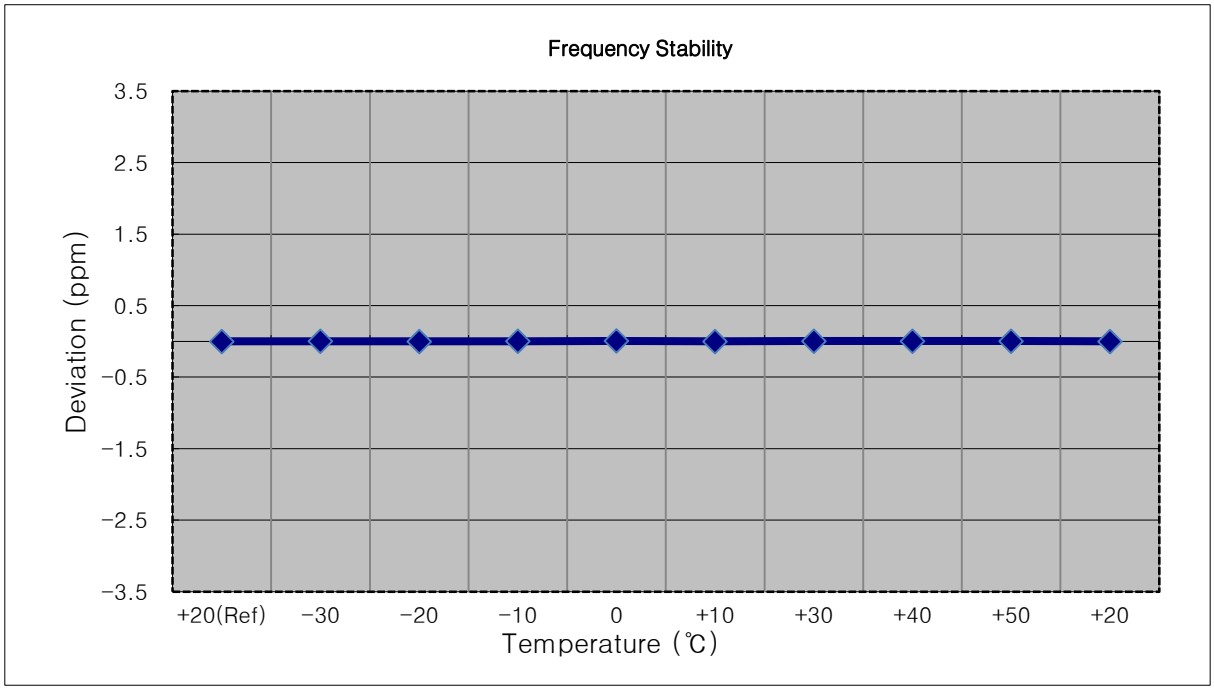
▣ OPERATING FREQUENCY: 1779,300,000 Hz

▣ CHANNEL: 132665 (1.4 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1779 300 018	0.0	0.000 000	0.000
100 %		-30	1779 300 023	4.5	0.000 000	0.003
100 %		-20	1779 300 018	-0.2	0.000 000	0.000
100 %		-10	1779 300 023	4.9	0.000 000	0.003
100 %		0	1779 300 029	10.4	0.000 001	0.006
100 %		+10	1779 300 017	-1.3	0.000 000	-0.001
100 %		+30	1779 300 027	9.1	0.000 001	0.005
100 %		+40	1779 300 026	8.0	0.000 000	0.004
100 %		+50	1779 300 025	6.8	0.000 000	0.004
Batt. Endpoint	3.400	+20	1779 300 019	1.0	0.000 000	0.001



▣ MODE: LTE 66

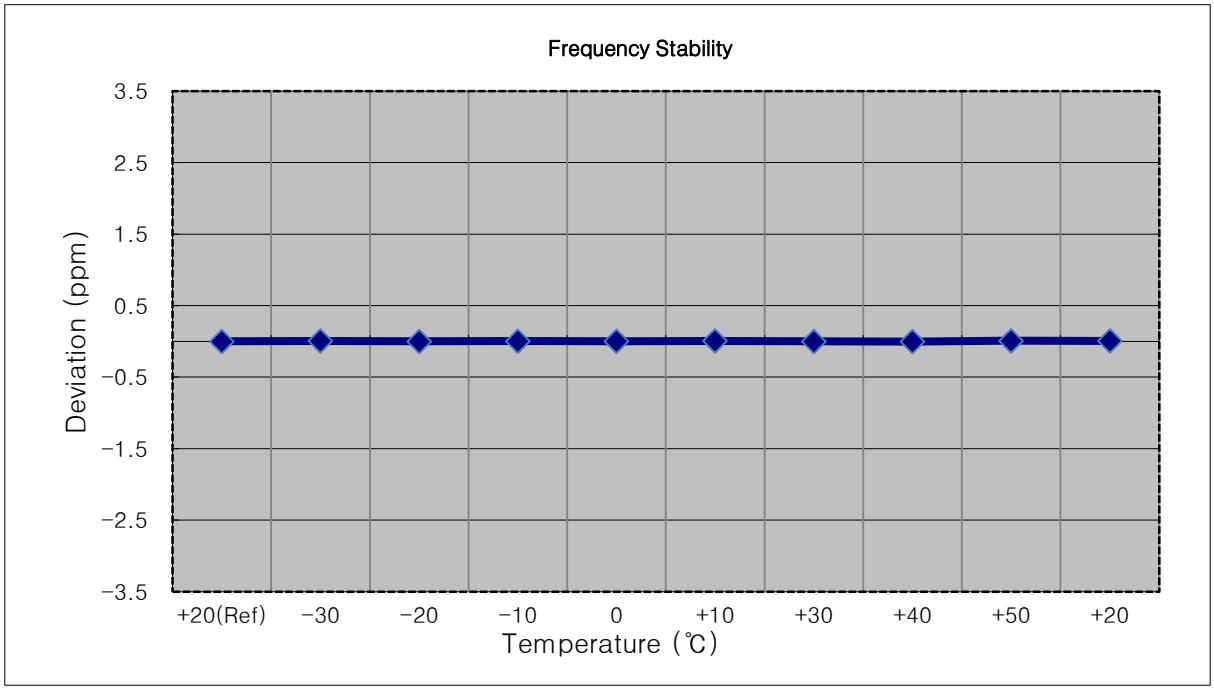
▣ OPERATING FREQUENCY: 1778,500,000 Hz

▣ CHANNEL: 132657 (3 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1778 499 999	0.0	0.000 000	0.000
100 %		-30	1778 500 013	13.7	0.000 001	0.008
100 %		-20	1778 500 000	0.7	0.000 000	0.000
100 %		-10	1778 500 009	9.8	0.000 001	0.006
100 %		0	1778 500 004	4.8	0.000 000	0.003
100 %		+10	1778 500 013	13.6	0.000 001	0.008
100 %		+30	1778 499 998	-0.7	0.000 000	0.000
100 %		+40	1778 499 997	-2.1	0.000 000	-0.001
100 %		+50	1778 500 013	14.4	0.000 001	0.008
Batt. Endpoint	3.400	+20	1778 500 010	10.8	0.000 001	0.006



▣ MODE: LTE 66

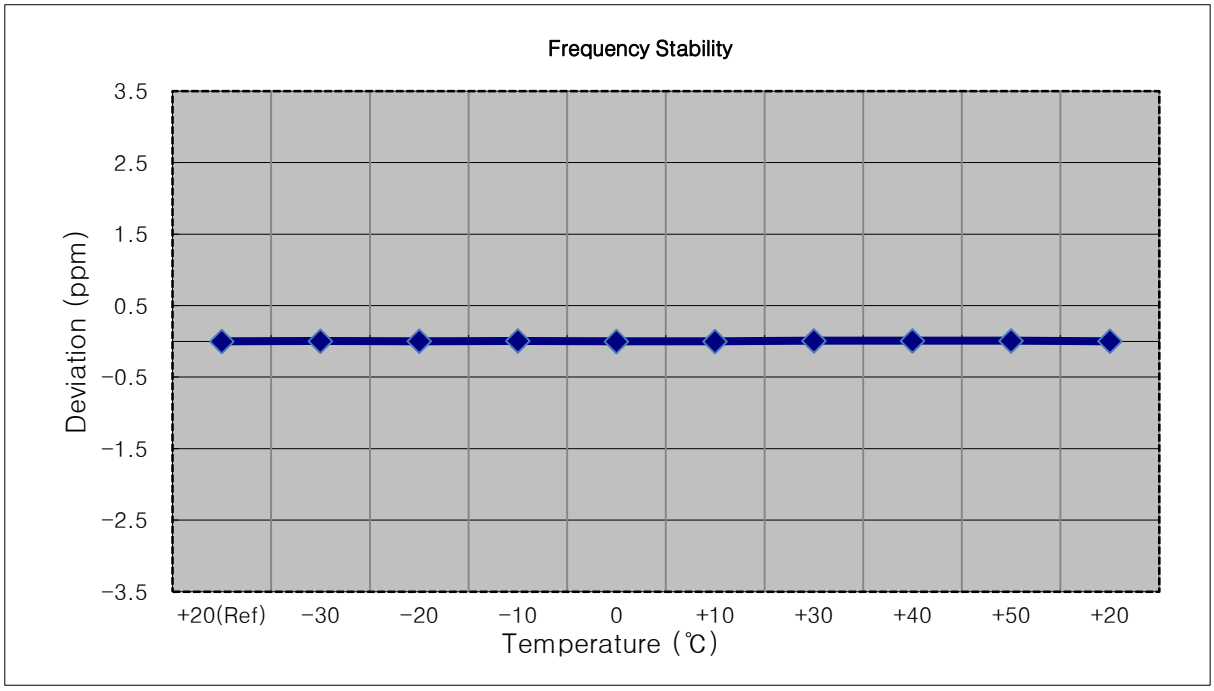
▣ OPERATING FREQUENCY: 1777,500,000 Hz

▣ CHANNEL: 132647 (5 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1777 500 010	0.0	0.000 000	0.000
100 %		-30	1777 500 017	6.8	0.000 000	0.004
100 %		-20	1777 500 015	4.6	0.000 000	0.003
100 %		-10	1777 500 021	11.3	0.000 001	0.006
100 %		0	1777 500 009	-1.3	0.000 000	-0.001
100 %		+10	1777 500 011	1.0	0.000 000	0.001
100 %		+30	1777 500 028	17.5	0.000 001	0.010
100 %		+40	1777 500 026	16.0	0.000 001	0.009
100 %		+50	1777 500 027	17.0	0.000 001	0.010
Batt. Endpoint	3.400	+20	1777 500 014	4.5	0.000 000	0.003



▣ MODE: LTE 66

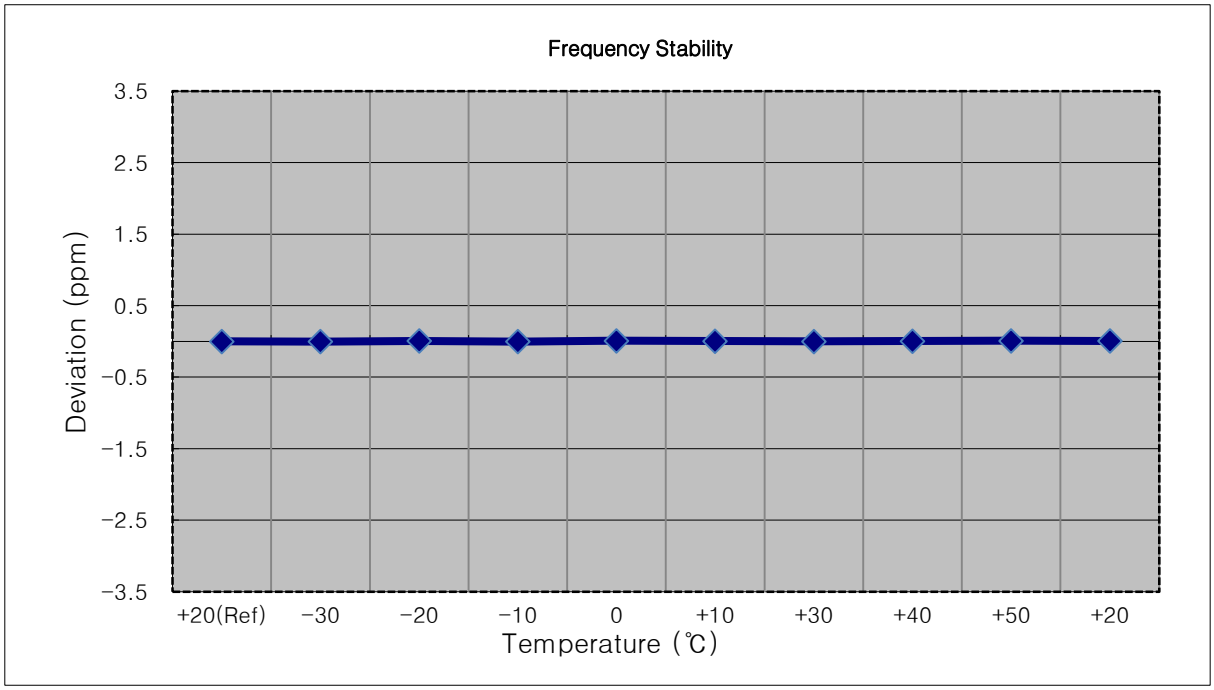
▣ OPERATING FREQUENCY: 1775,000,000 Hz

▣ CHANNEL: 132622 (10 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1775 000 012	0.0	0.000 000	0.000
100 %		-30	1775 000 008	-3.5	0.000 000	-0.002
100 %		-20	1775 000 024	12.7	0.000 001	0.007
100 %		-10	1775 000 009	-2.8	0.000 000	-0.002
100 %		0	1775 000 029	17.2	0.000 001	0.010
100 %		+10	1775 000 019	7.7	0.000 000	0.004
100 %		+30	1775 000 010	-1.8	0.000 000	-0.001
100 %		+40	1775 000 021	9.1	0.000 001	0.005
100 %		+50	1775 000 029	17.1	0.000 001	0.010
Batt. Endpoint	3.400	+20	1775 000 022	10.2	0.000 001	0.006



▣ MODE: LTE 66

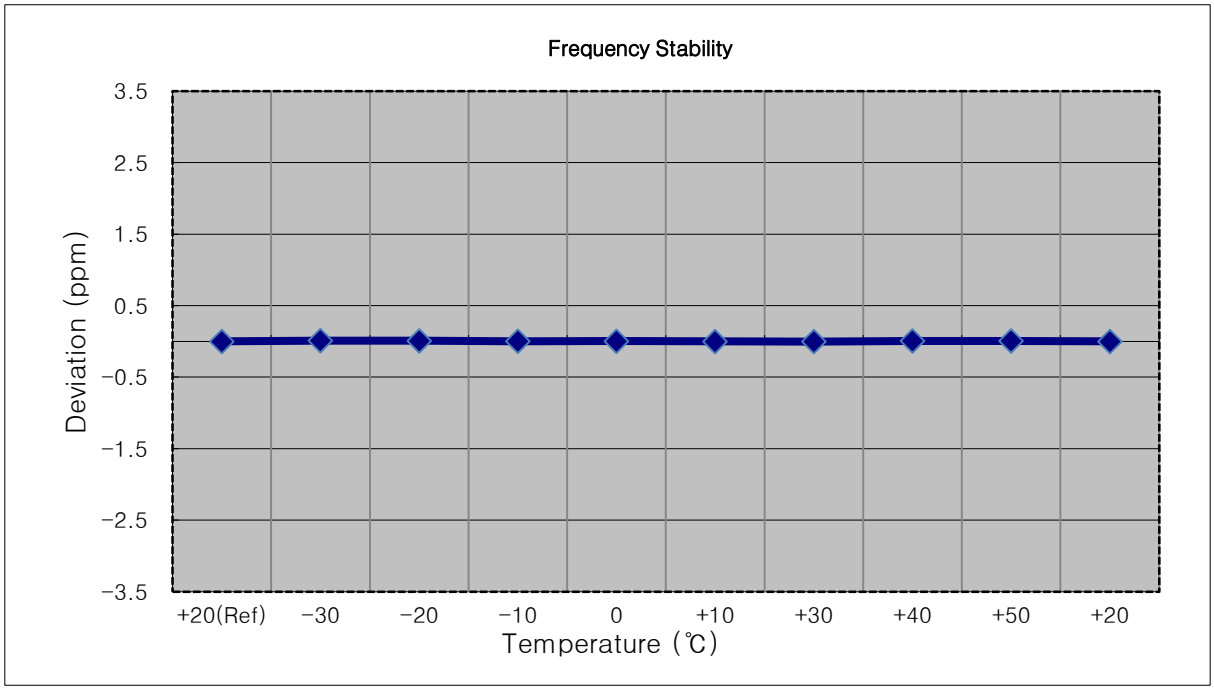
▣ OPERATING FREQUENCY: 1772,500,000 Hz

▣ CHANNEL: 132597 (15 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1772 499 998	0.0	0.000 000	0.000
100 %		-30	1772 500 016	18.0	0.000 001	0.010
100 %		-20	1772 500 015	17.0	0.000 001	0.010
100 %		-10	1772 500 003	5.2	0.000 000	0.003
100 %		0	1772 500 006	8.0	0.000 000	0.005
100 %		+10	1772 499 997	-0.9	0.000 000	-0.001
100 %		+30	1772 499 995	-2.4	0.000 000	-0.001
100 %		+40	1772 500 008	10.2	0.000 001	0.006
100 %		+50	1772 500 008	10.4	0.000 001	0.006
Batt. Endpoint	3.400	+20	1772 499 999	1.5	0.000 000	0.001



▣ MODE: LTE 66

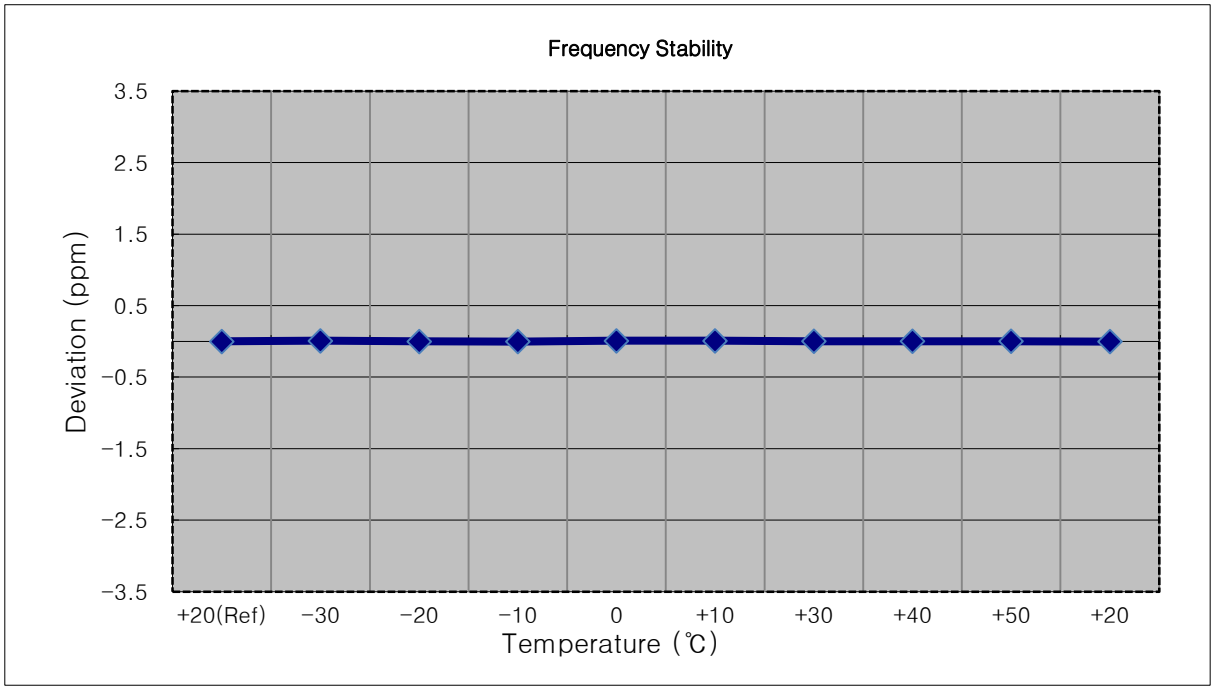
▣ OPERATING FREQUENCY: 1770,000,000 Hz

▣ CHANNEL: 132572 (20 MHz)

▣ REFERENCE VOLTAGE: 3.860 VDC

▣ DEVIATION LIMIT: Emission must remain in band

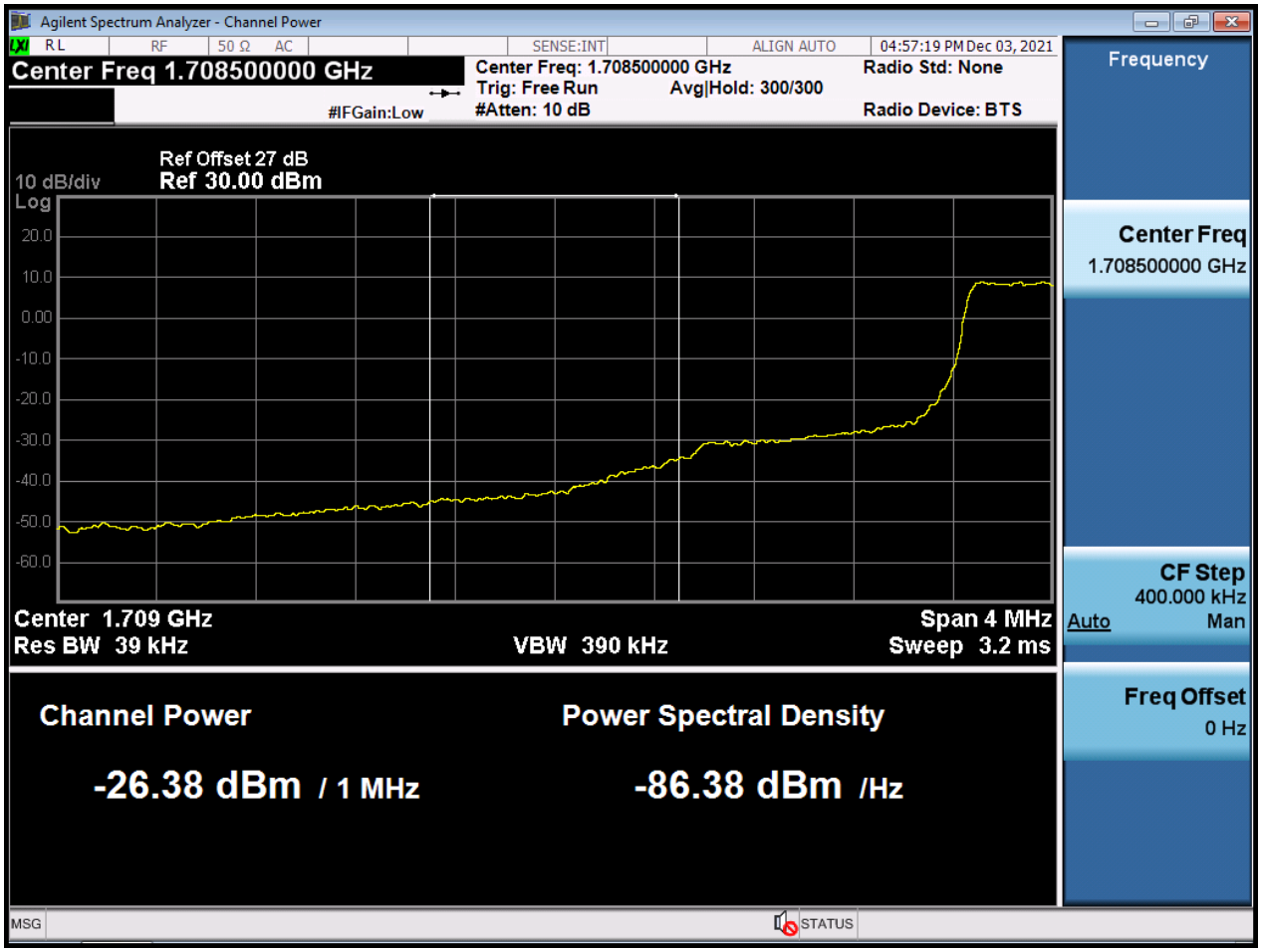
Voltage (%)	Power (VDC)	Temp. (℃)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100 %	3.860	+20(Ref)	1770 000 002	0.0	0.000 000	0.000
100 %		-30	1770 000 017	15.1	0.000 001	0.009
100 %		-20	1770 000 001	-0.8	0.000 000	0.000
100 %		-10	1770 000 000	-2.5	0.000 000	-0.001
100 %		0	1770 000 018	15.5	0.000 001	0.009
100 %		+10	1770 000 019	17.2	0.000 001	0.010
100 %		+30	1770 000 005	3.4	0.000 000	0.002
100 %		+40	1770 000 007	5.2	0.000 000	0.003
100 %		+50	1770 000 005	2.8	0.000 000	0.002
Batt. Endpoint	3.400	+20	1769 999 999	-2.8	0.000 000	-0.002



9. TEST PLOTS

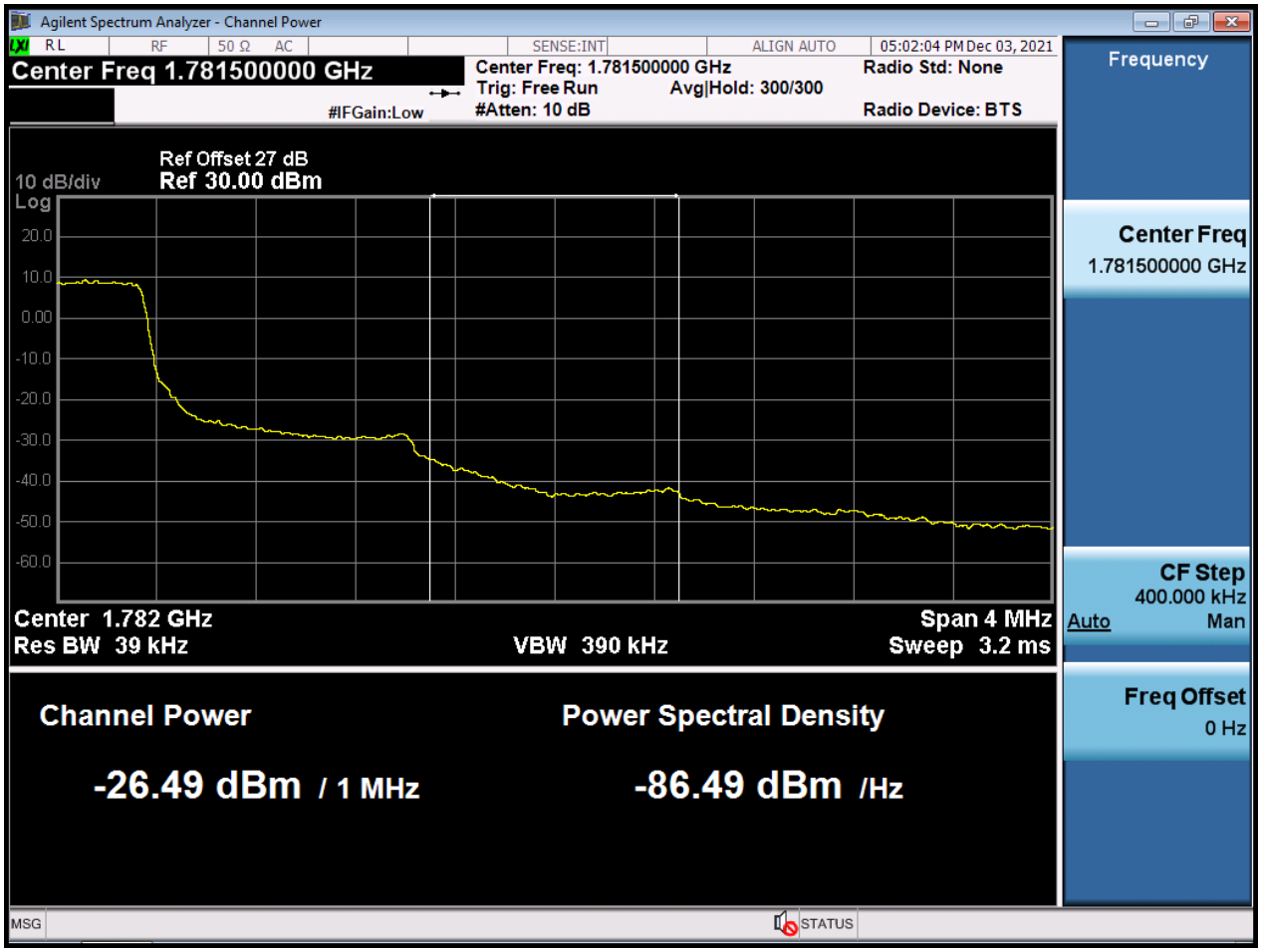
BW1.4 M_BandEdge_Lowest Channel_QPSK_FullRB (1) (Main1 Ant)

BW1.4 M_BandEdge_Lowest Channel_QPSK_FullRB (2) (Main1 Ant)

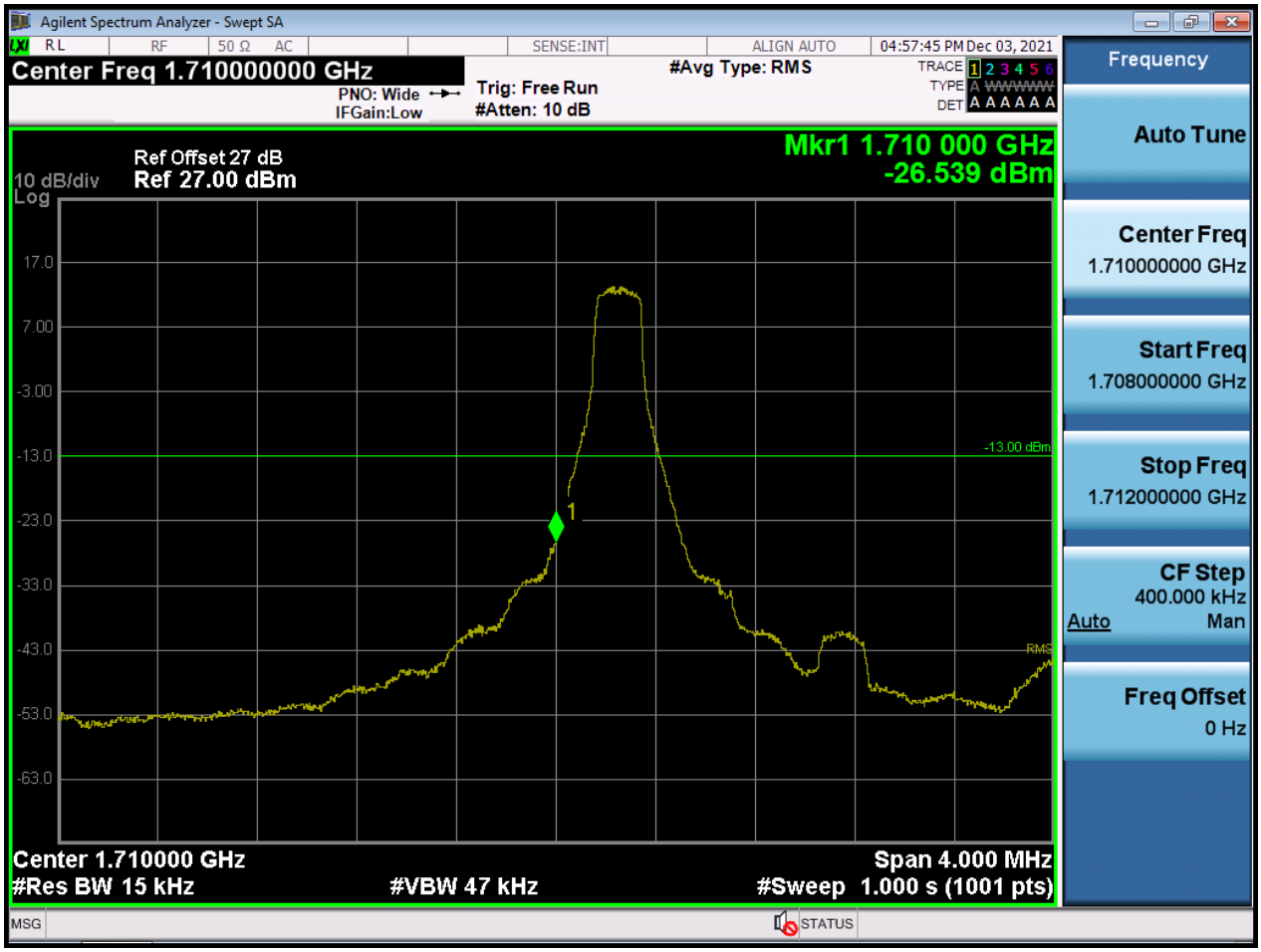


BW1.4 M_BandEdge_Highest Channel_QPSK_FullRB (1) (Main1 Ant)

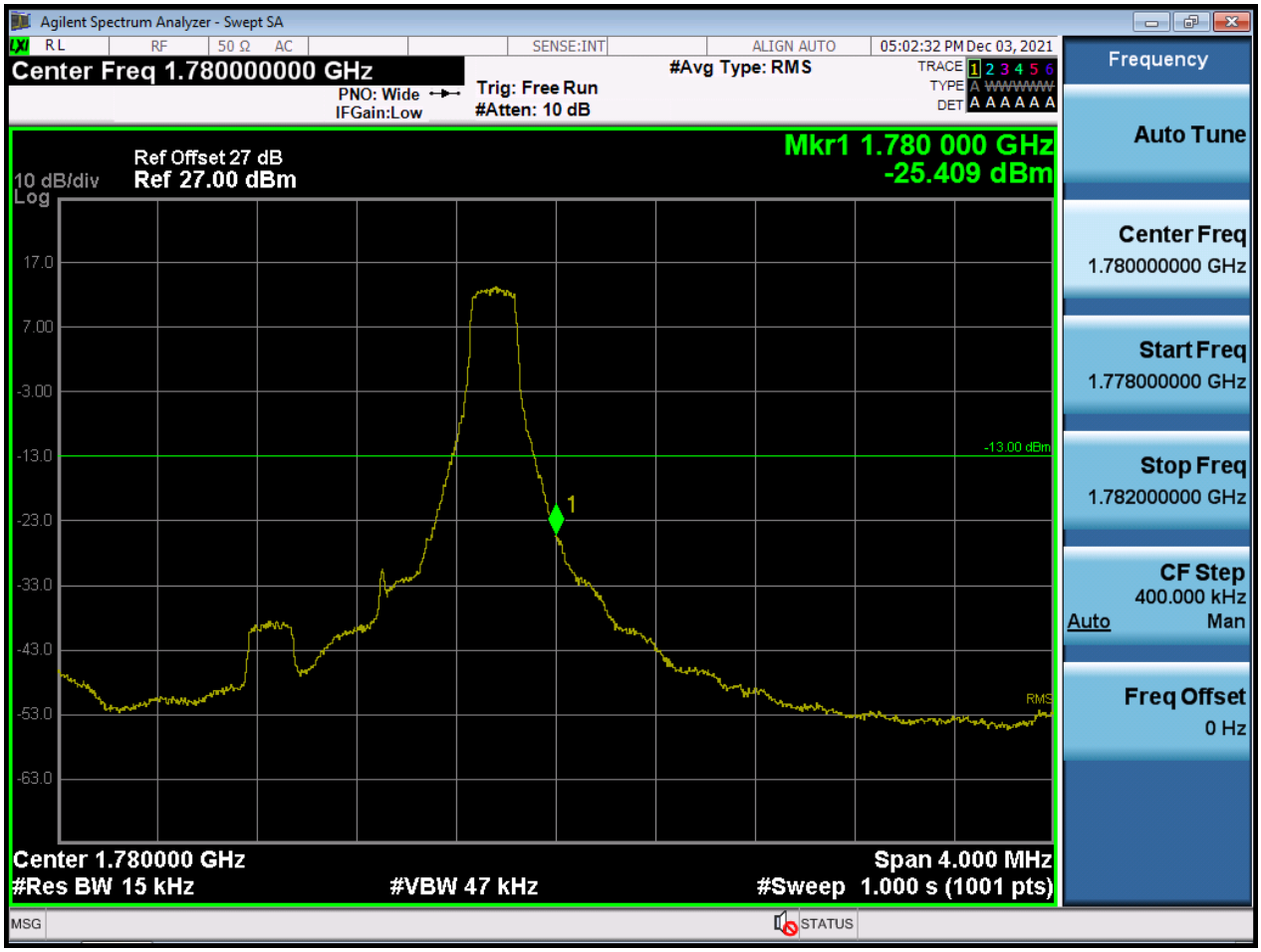
BW1.4 M_BandEdge_Highest Channel_QPSK_FullRB (2) (Main1 Ant)



BW1.4 M_BandEdge_Lowest Channel_QPSK_1RB (Main1 Ant)

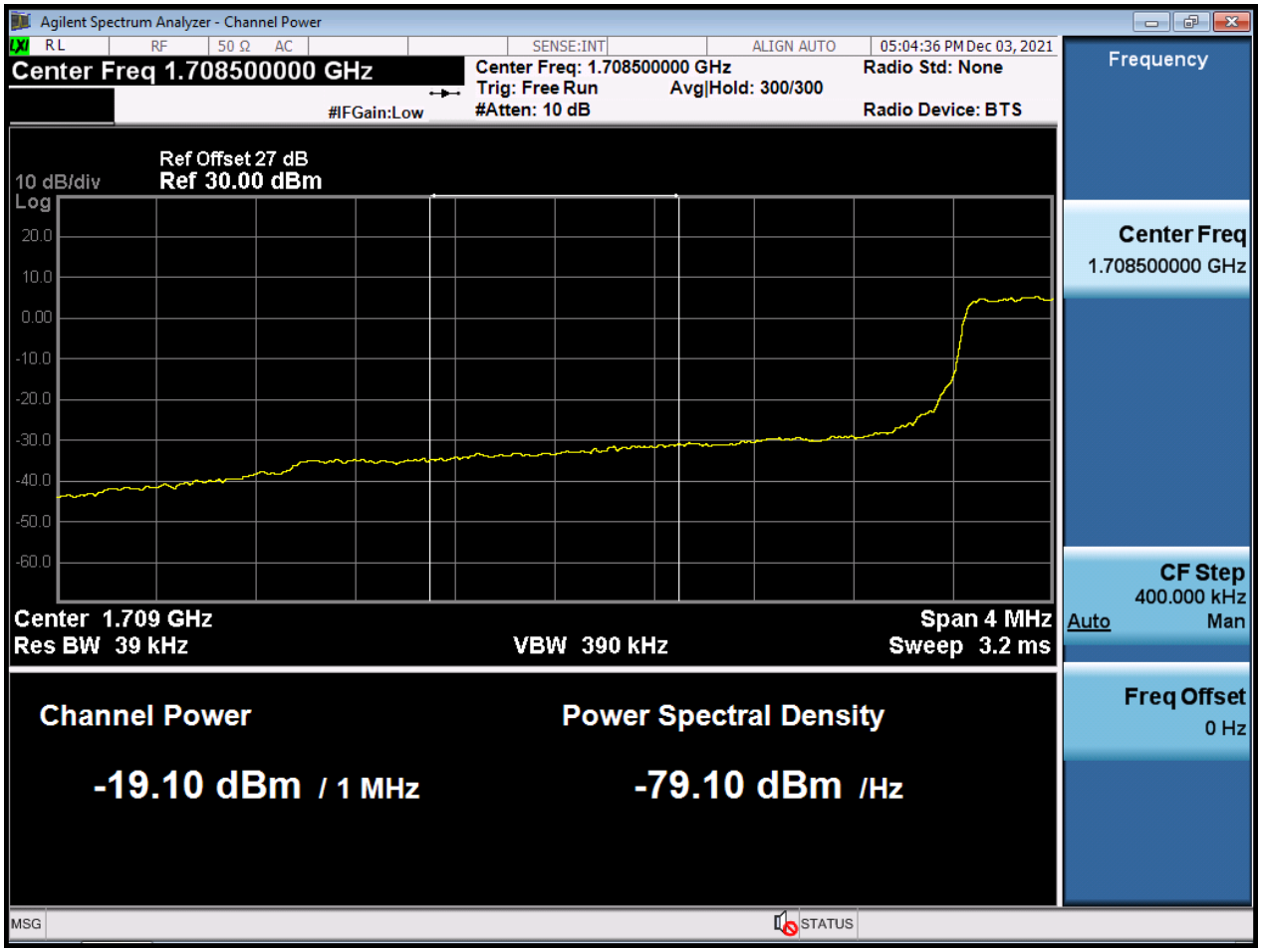


BW1.4 M_BandEdge_Highest Channel_QPSK_1RB (Main1 Ant)



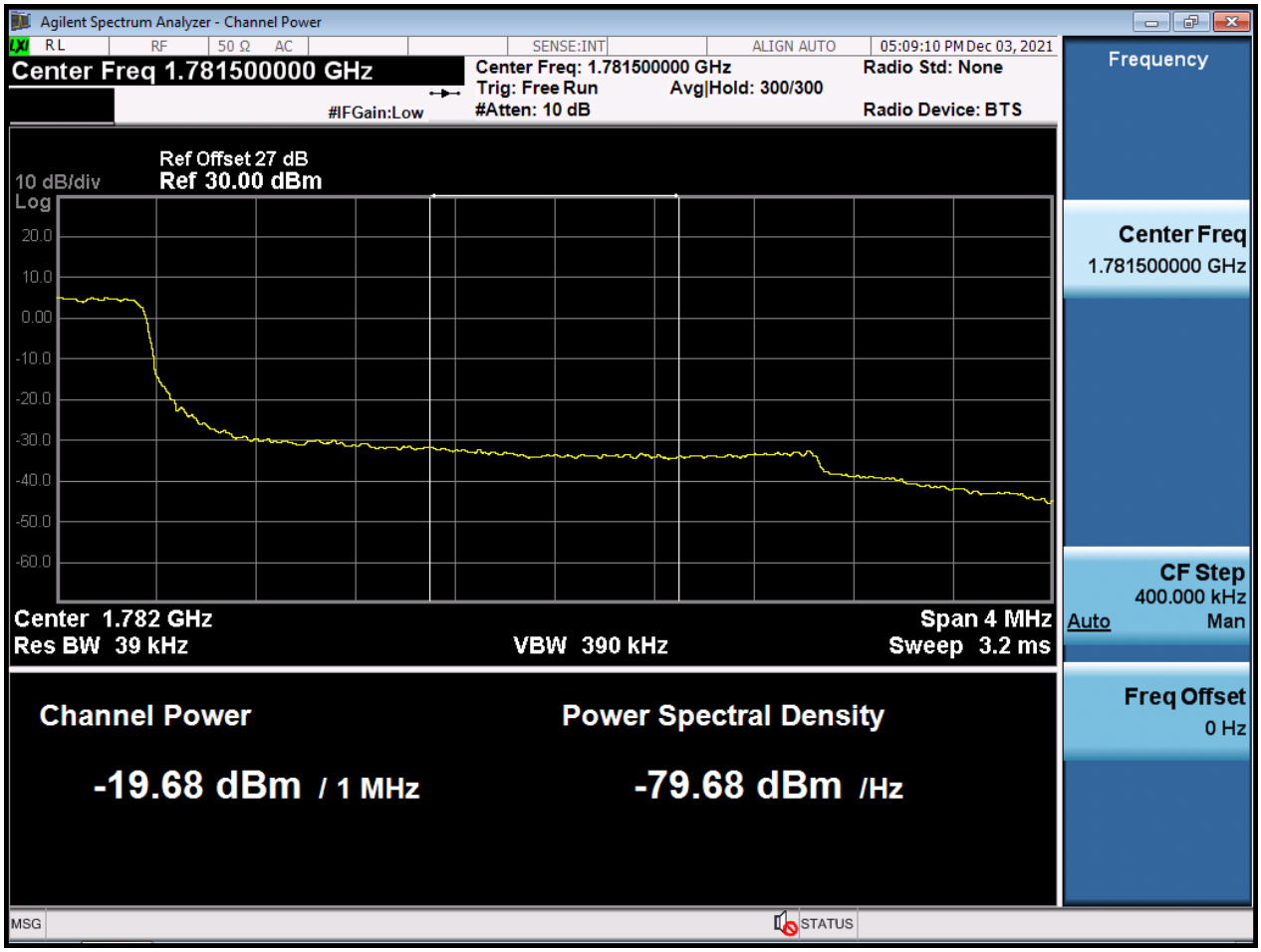
BW3 M_BandEdge_Lowest Channel_QPSK_FullRB (1) (Main1 Ant)

BW3 M_BandEdge_Lowest Channel_QPSK_FullRB (2) (Main1 Ant)

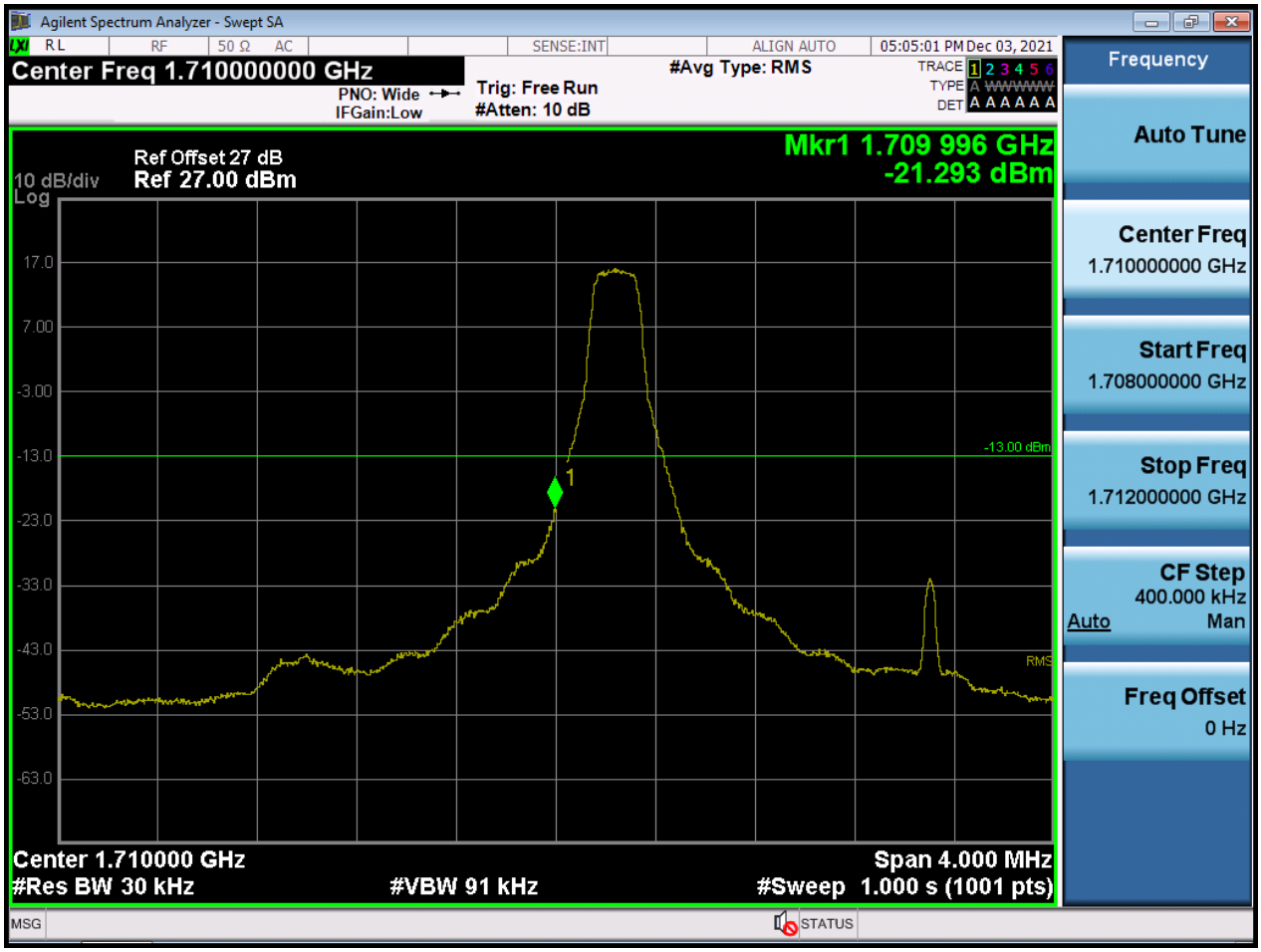


BW3 M_BandEdge_Highest Channel_QPSK_FullRB (1) (Main1 Ant)

BW3 M_BandEdge_Highest Channel_QPSK_FullRB (2) (Main1 Ant)



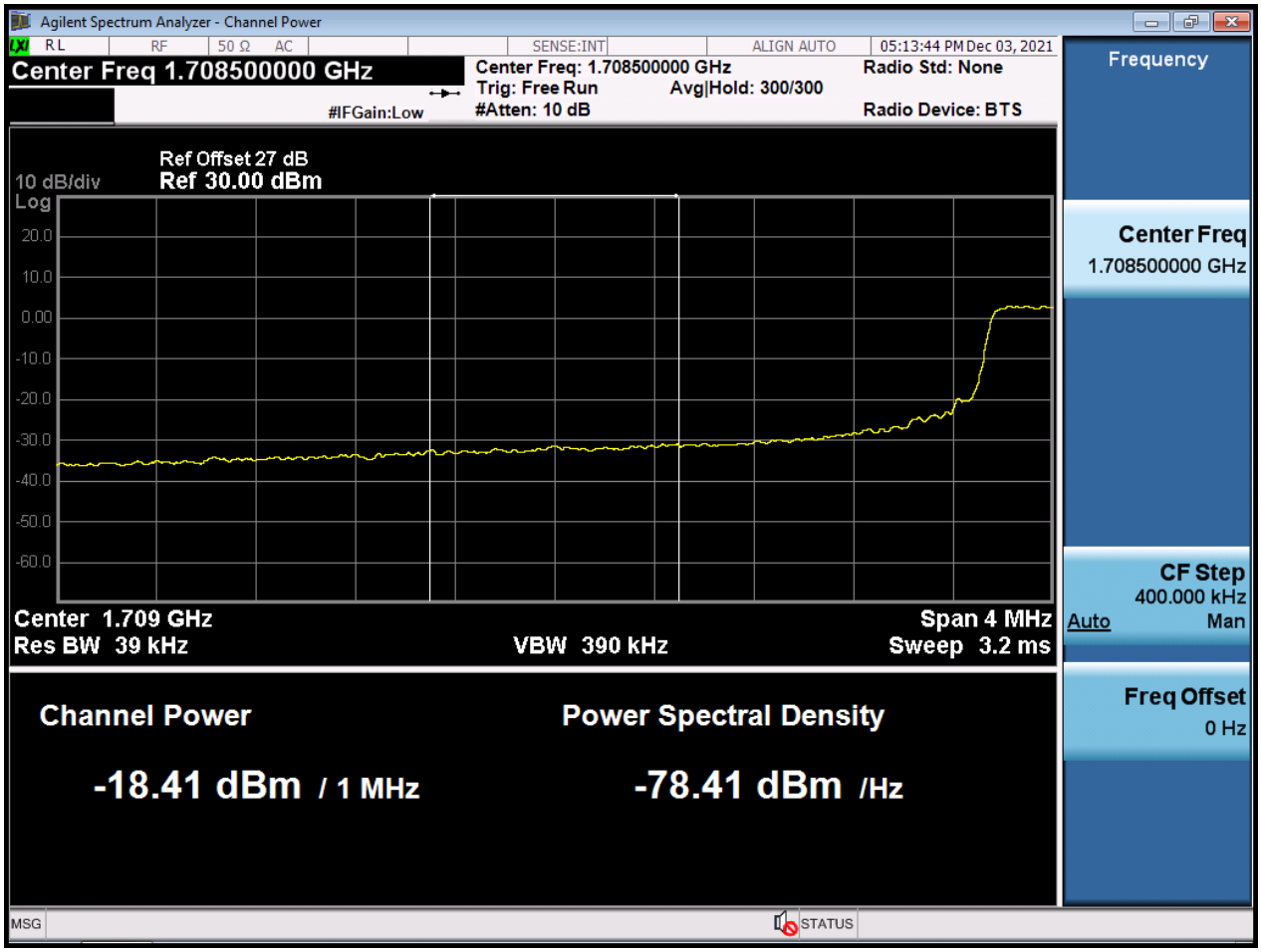
BW3 M_BandEdge_Lowest Channel_QPSK_1RB (Main1 Ant)



BW3 M_BandEdge_Highest Channel_QPSK_1RB (Main1 Ant)

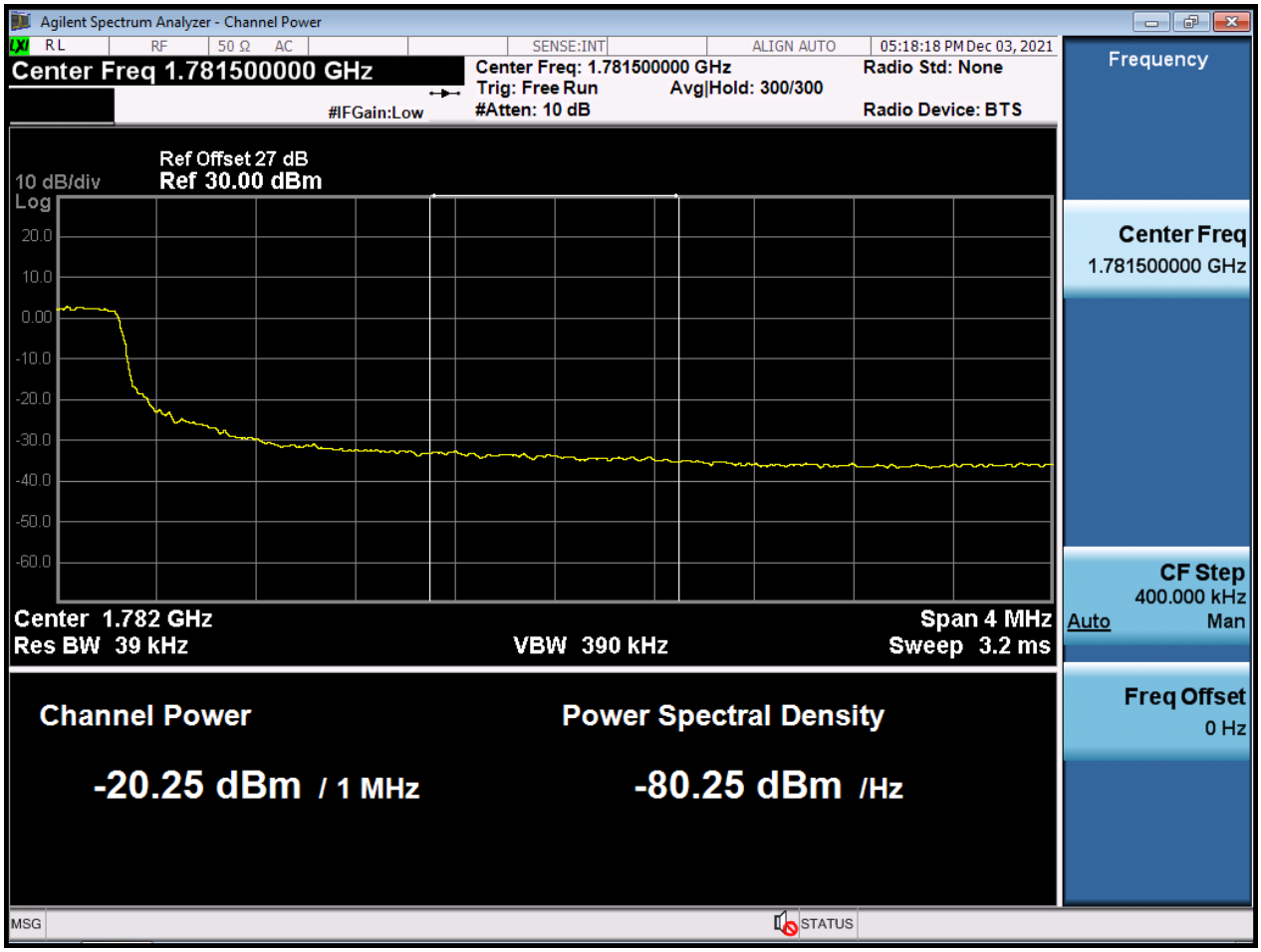
BW5 M_BandEdge_Lowest Channel_QPSK_FullRB (1) (Main1 Ant)

BW5 M_BandEdge_Lowest Channel_QPSK_FullRB (2) (Main1 Ant)

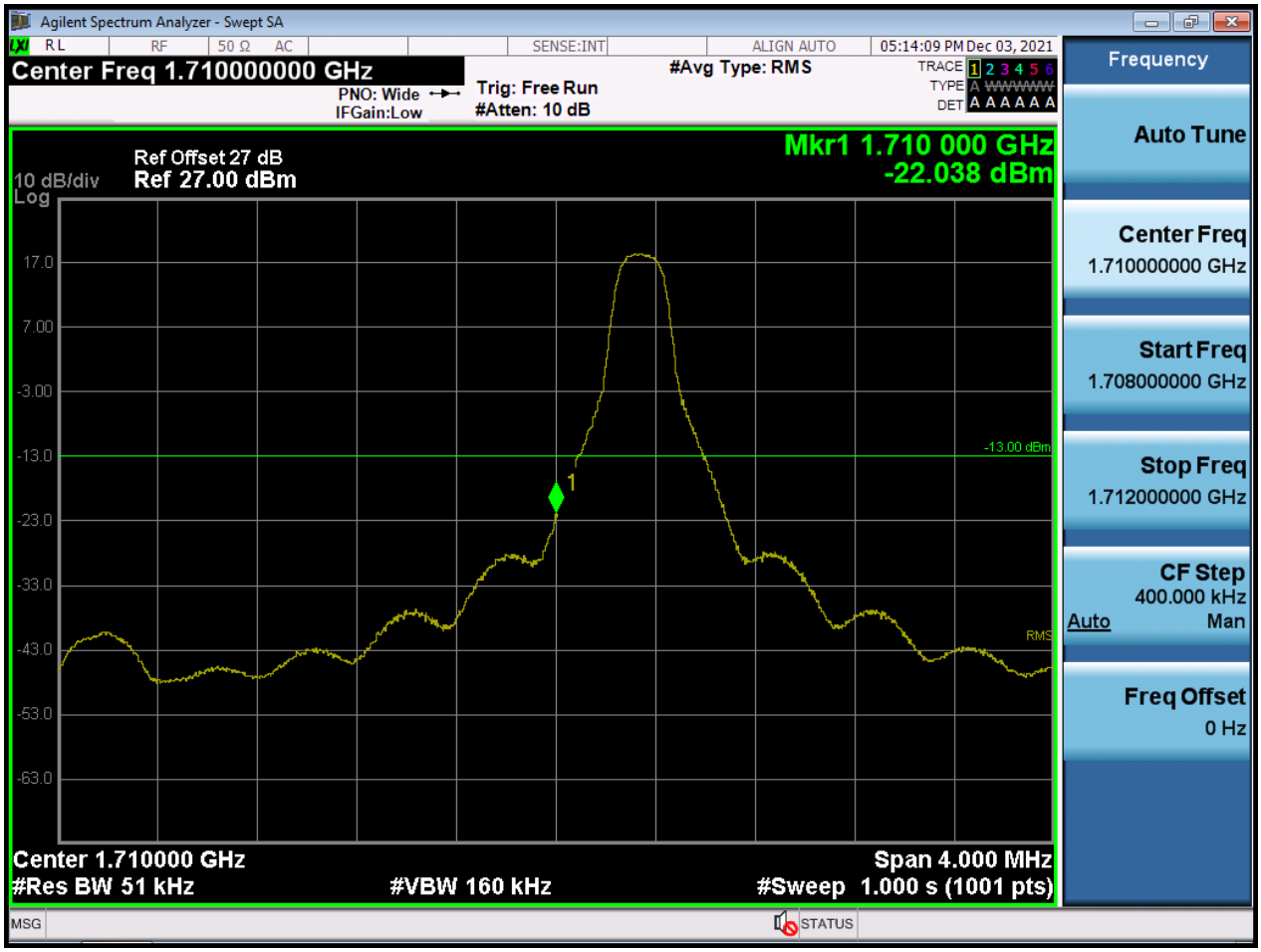


BW5 M_BandEdge_Highest Channel_QPSK_FullRB (1) (Main1 Ant)

BW5 M_BandEdge_Highest Channel_QPSK_FullRB (2) (Main1 Ant)



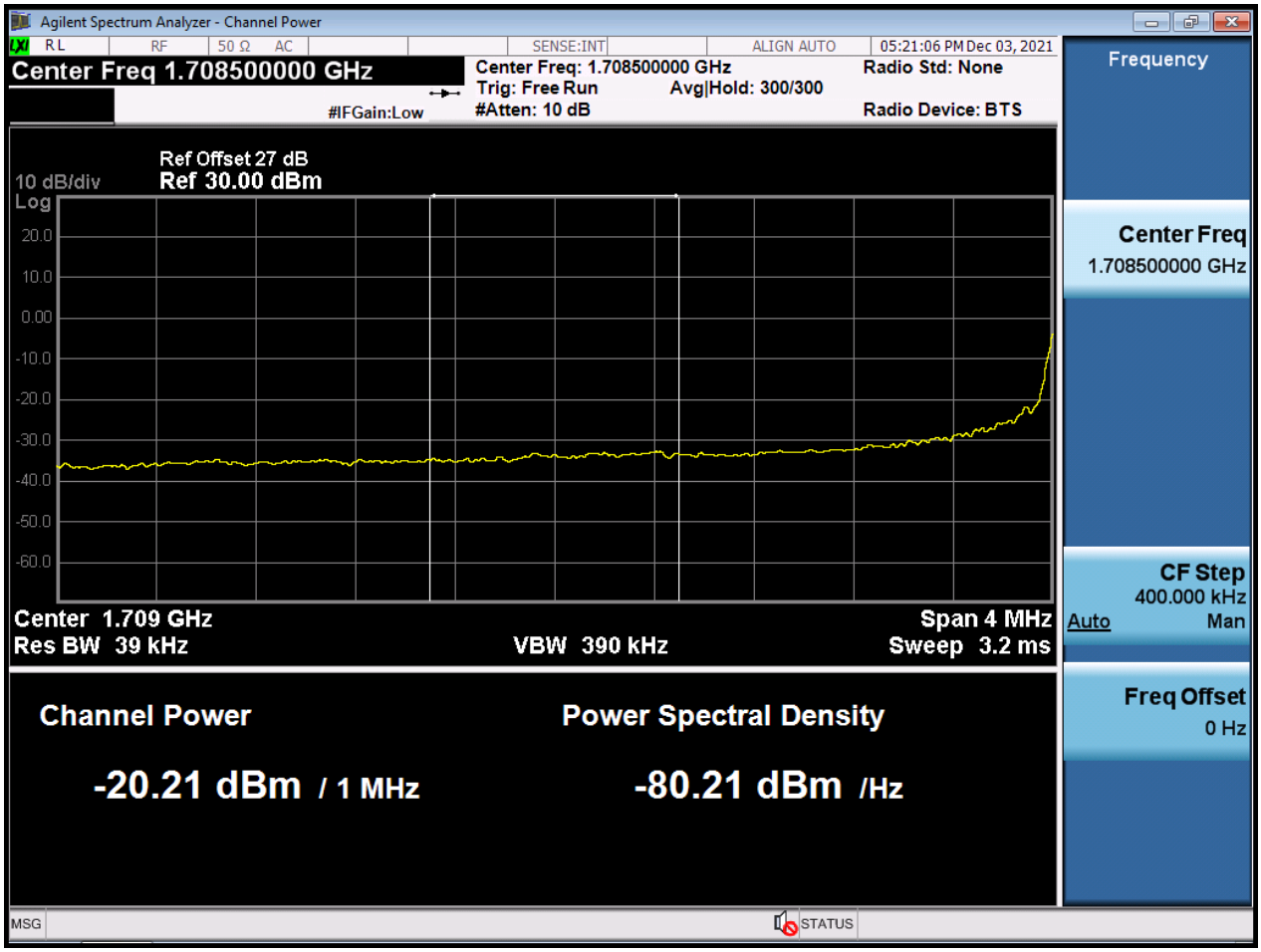
BW5 M_BandEdge_Lowest Channel_QPSK_1RB (Main1 Ant)



BW5 M_BandEdge_Highest Channel_QPSK_1RB (Main1 Ant)

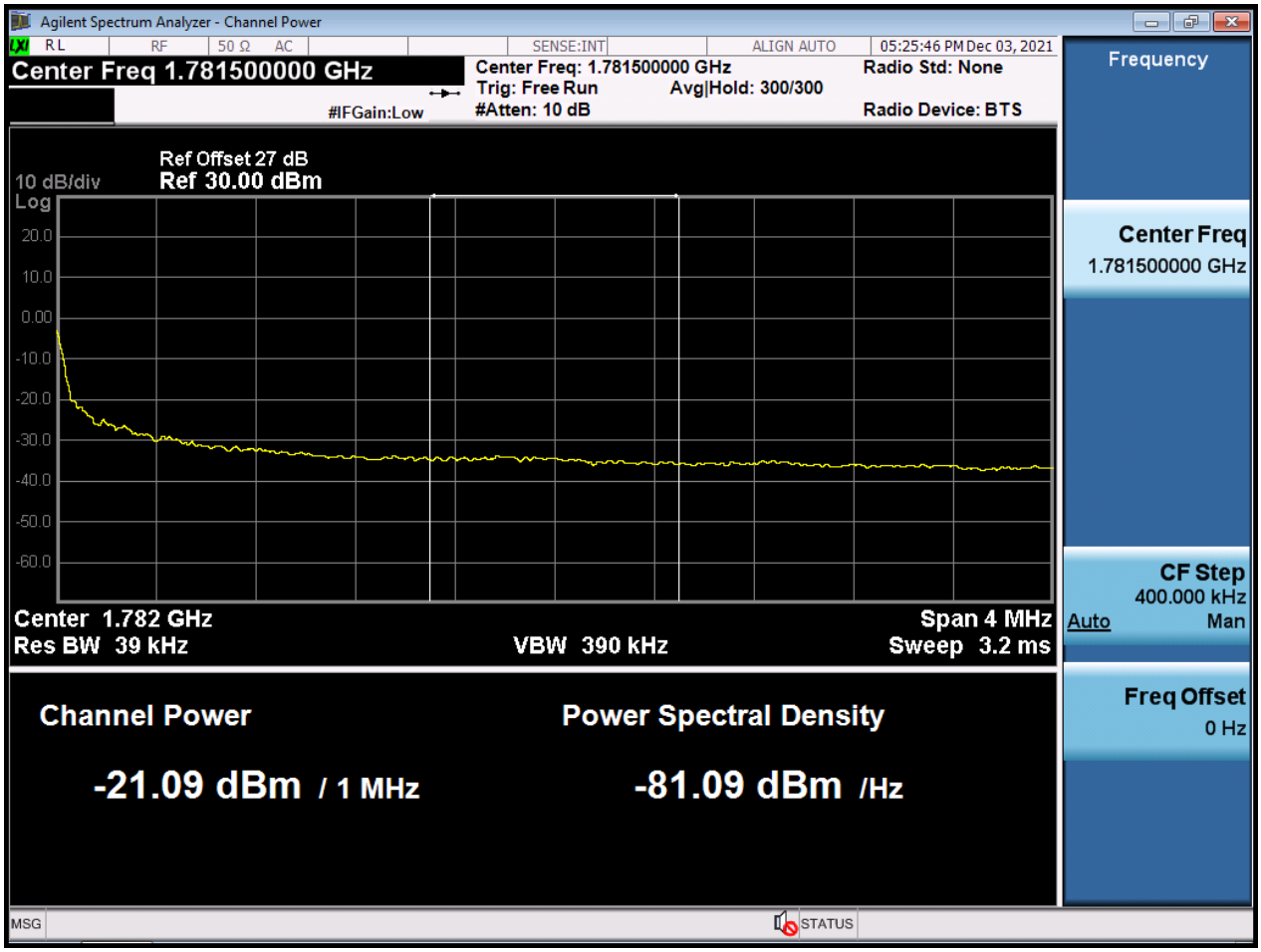
BW10 M_BandEdge_Lowest Channel_QPSK_FullRB (1) (Main1 Ant)

BW10 M_BandEdge_Lowest Channel_QPSK_FullRB (2) (Main1 Ant)



BW10 M_BandEdge_Highest Channel_QPSK_FullRB (1) (Main1 Ant)

BW10 M_BandEdge_Highest Channel_QPSK_FullRB (2) (Main1 Ant)

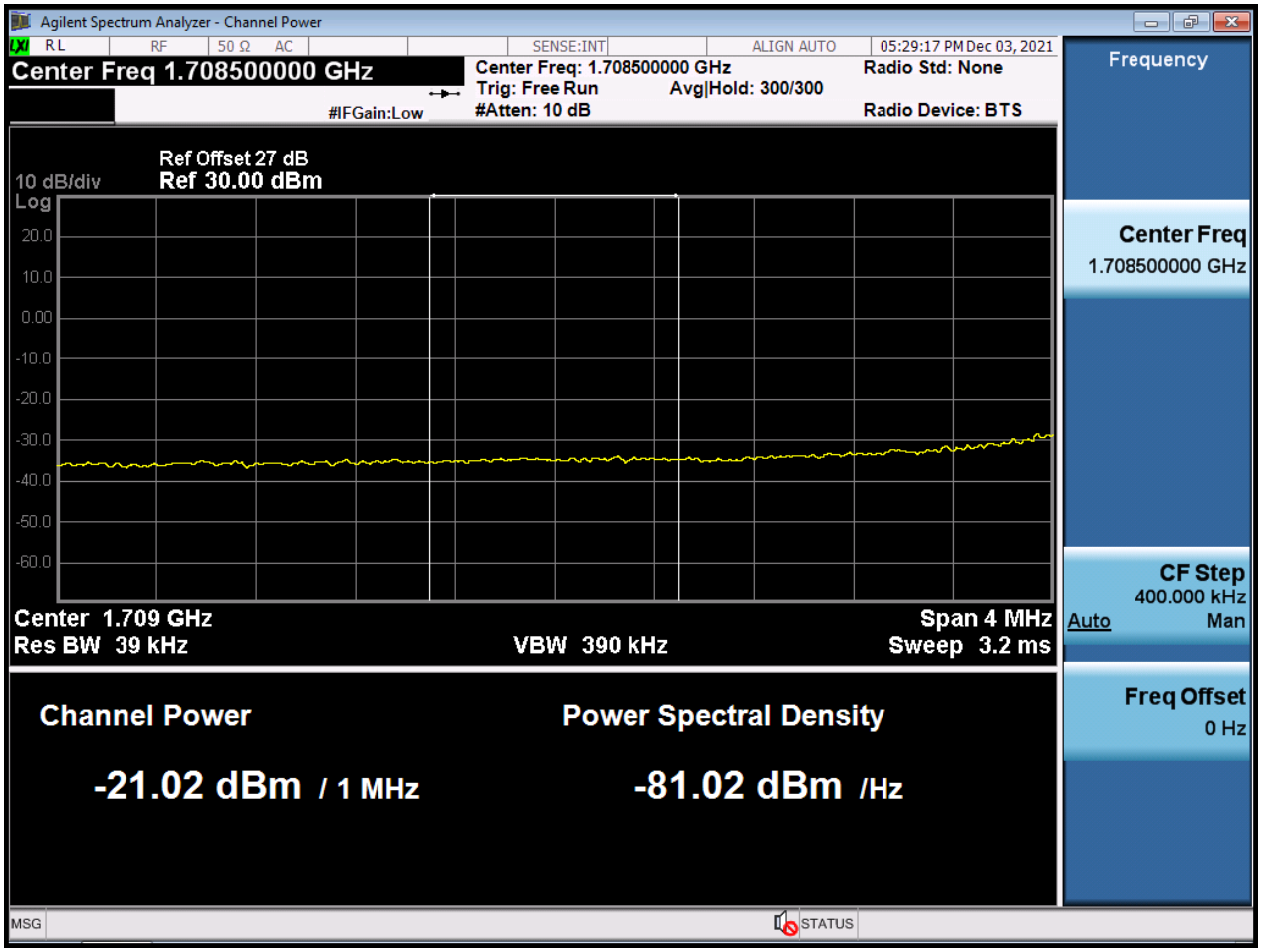


BW10 M_BandEdge_Lowest Channel_QPSK_1RB (Main1 Ant)

BW10 M_BandEdge_Highest Channel_QPSK_1RB (Main1 Ant)

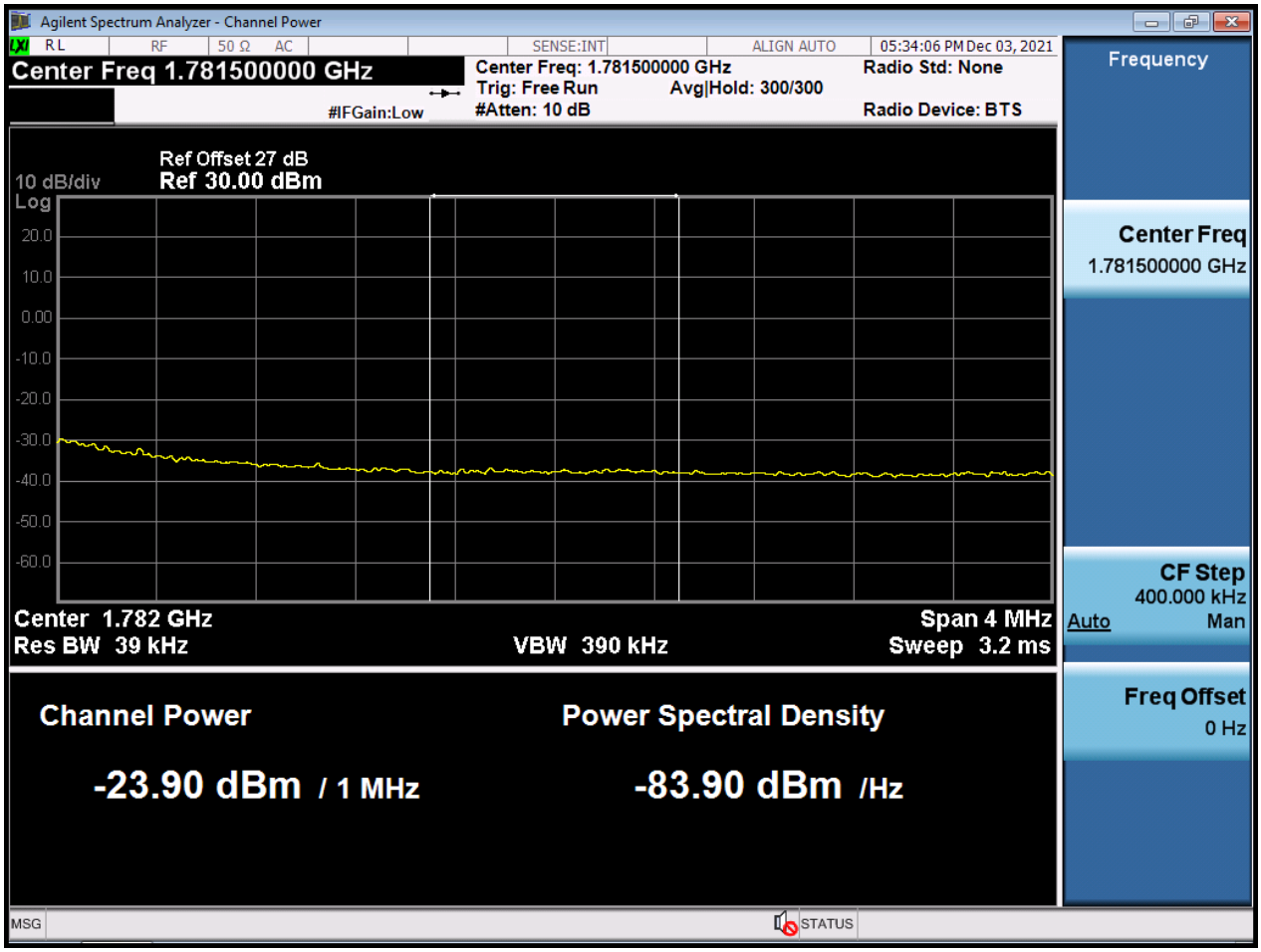
BW15 M_BandEdge_Lowest Channel_QPSK_FullRB (1) (Main1 Ant)

BW15 M_BandEdge_Lowest Channel_QPSK_FullRB (2) (Main1 Ant)



BW15 M_BandEdge_Highest Channel_QPSK_FullRB (1) (Main1 Ant)

BW15 M_BandEdge_Highest Channel_QPSK_FullRB (2) (Main1 Ant)

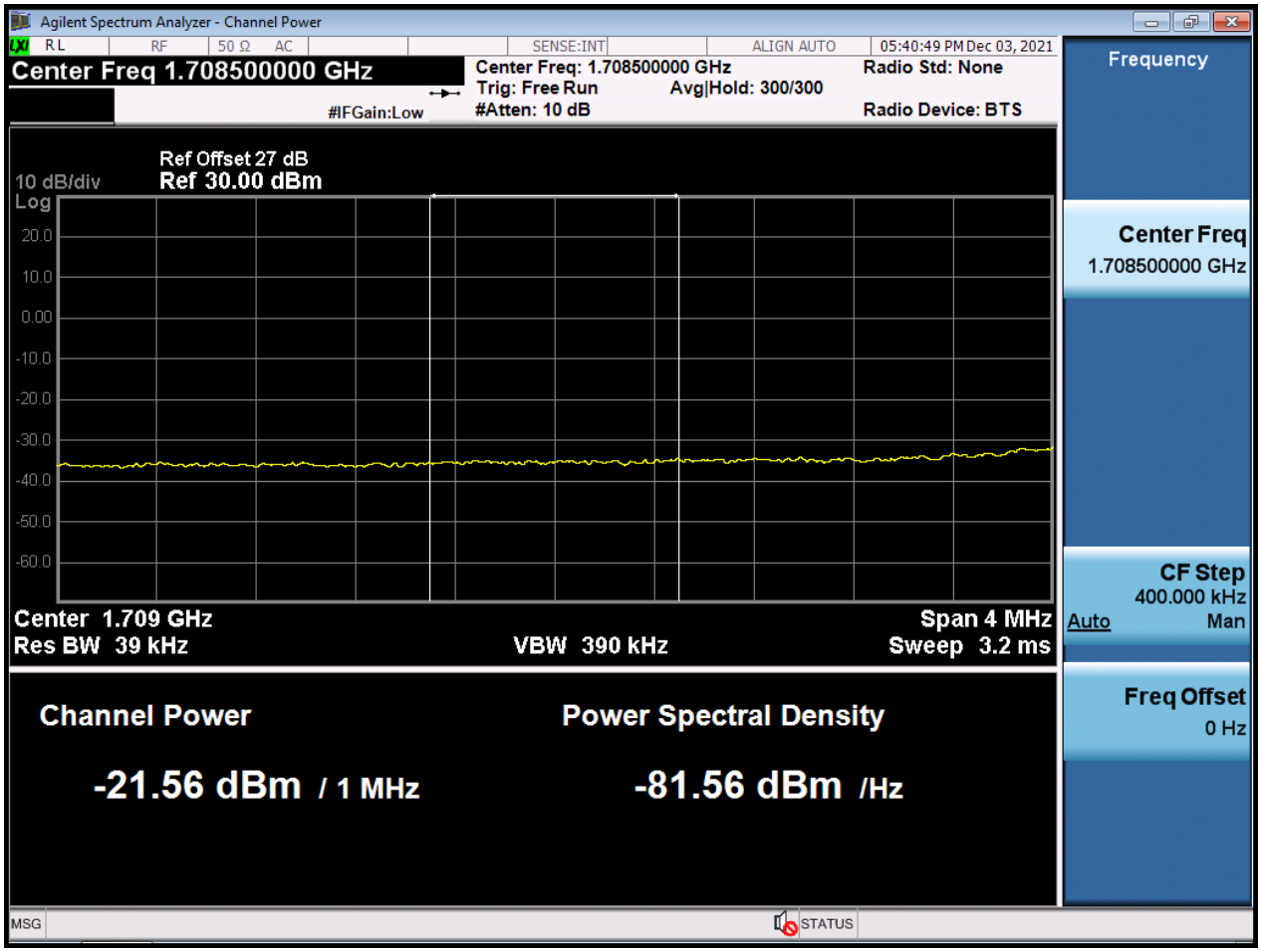


BW15 M_BandEdge_Lowest Channel_QPSK_1RB (Main1 Ant)

BW15 M_BandEdge_Highest Channel_QPSK_1RB (Main1 Ant)

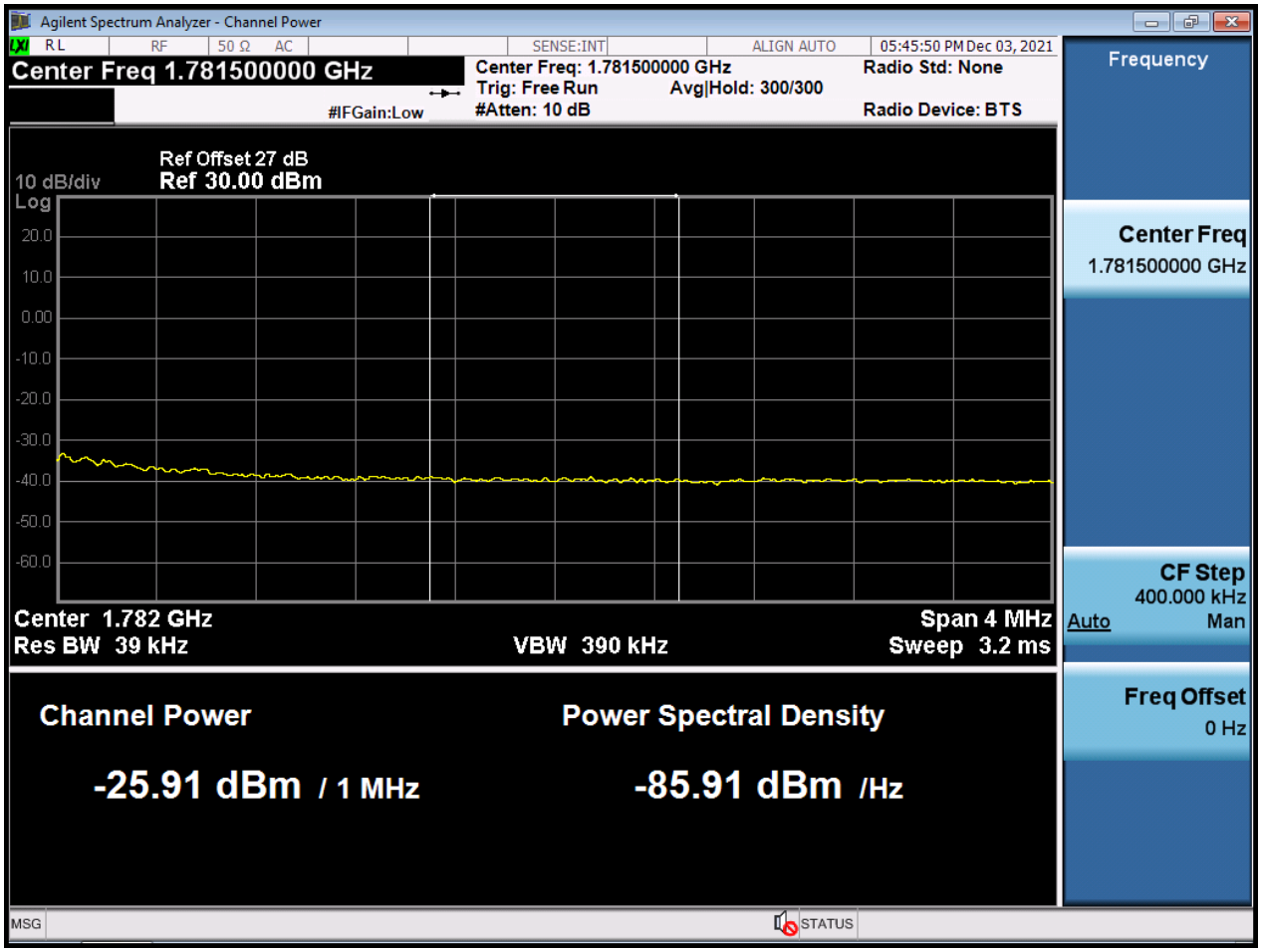
BW20 M_BandEdge_Lowest Channel_QPSK_FullRB (1) (Main1 Ant)

BW20 M_BandEdge_Lowest Channel_QPSK_FullRB (2) (Main1 Ant)



BW20 M_BandEdge_Highest Channel_QPSK_FullRB (1) (Main1 Ant)

BW20 M_BandEdge_Highest Channel_QPSK_FullRB (2) (Main1 Ant)



BW20 M_BandEdge_Lowest Channel_QPSK_1RB (Main1 Ant)

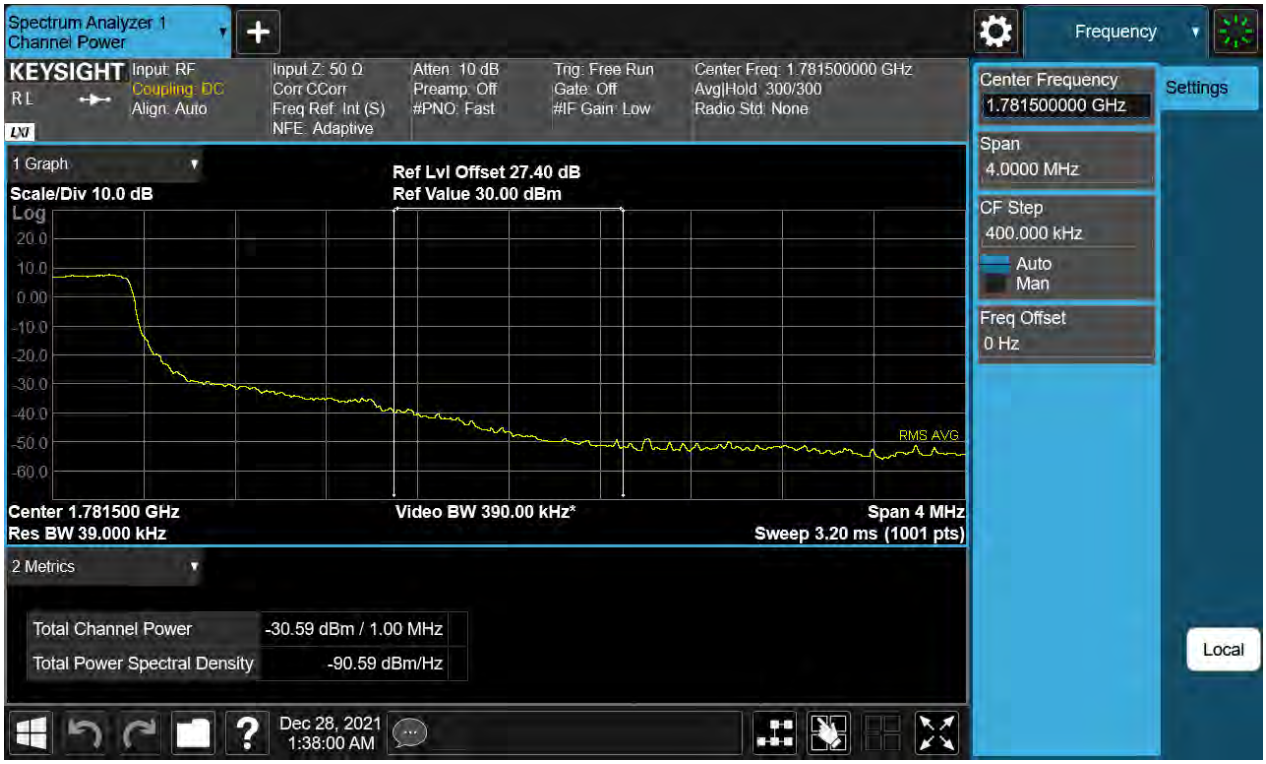
BW20 M_BandEdge_Highest Channel_QPSK_1RB (Main1 Ant)

BW1.4 M_BandEdge_Lowest Channel_QPSK_FullRB (1) (Sub2 Ant)

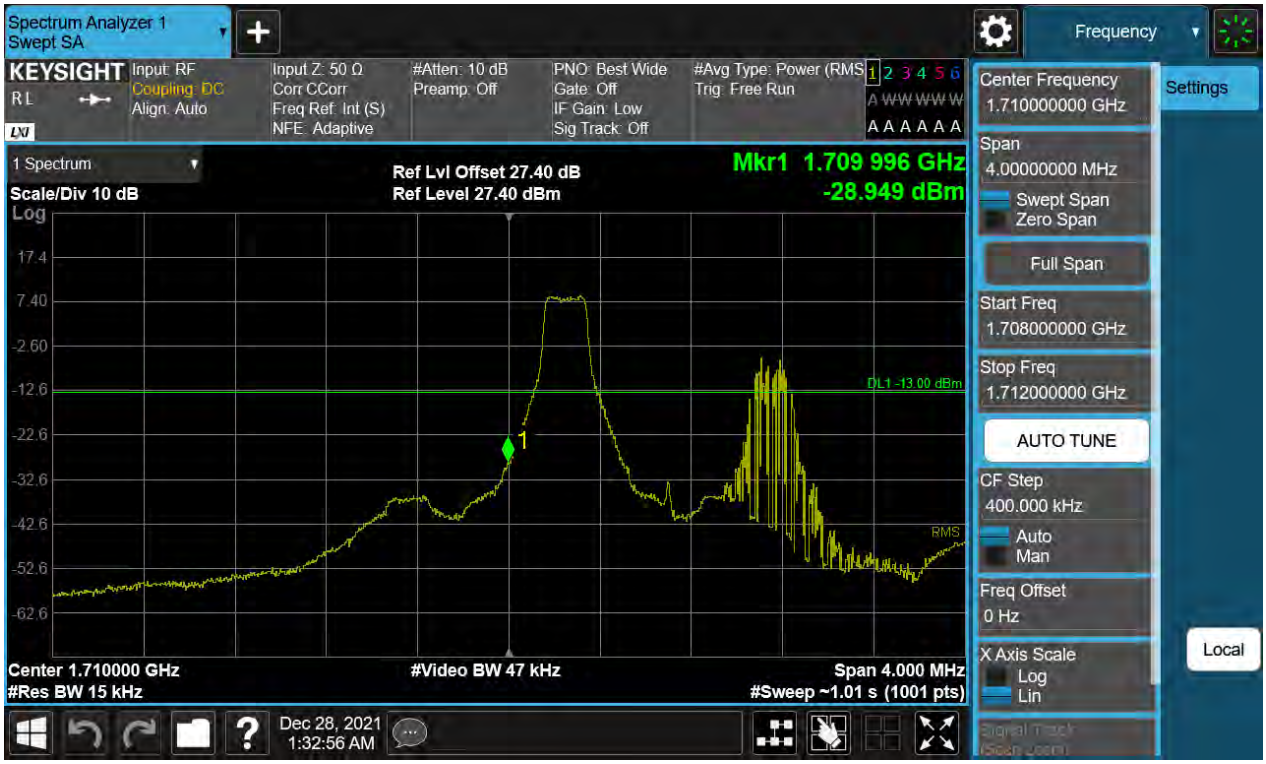
BW1.4 M_BandEdge_Lowest Channel_QPSK_FullRB (2) (Sub2 Ant)

BW1.4 M_BandEdge_Highest Channel_QPSK_FullRB (1) (Sub2 Ant)

BW1.4 M_BandEdge_Highest Channel_QPSK_FullRB (2) (Sub2 Ant)



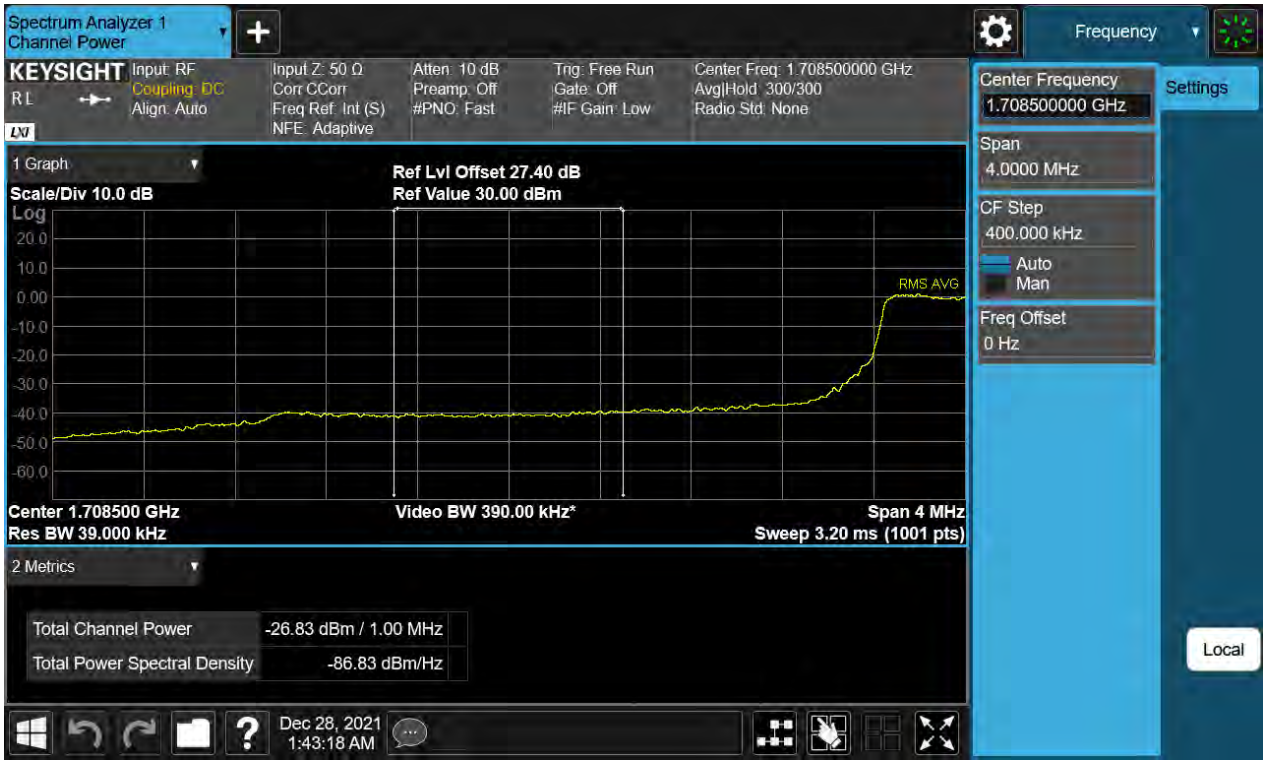
BW1.4 M_BandEdge_Lowest Channel_QPSK_1RB (Sub2 Ant)



BW1.4 M_BandEdge_Highest Channel_QPSK_1RB (Sub2 Ant)

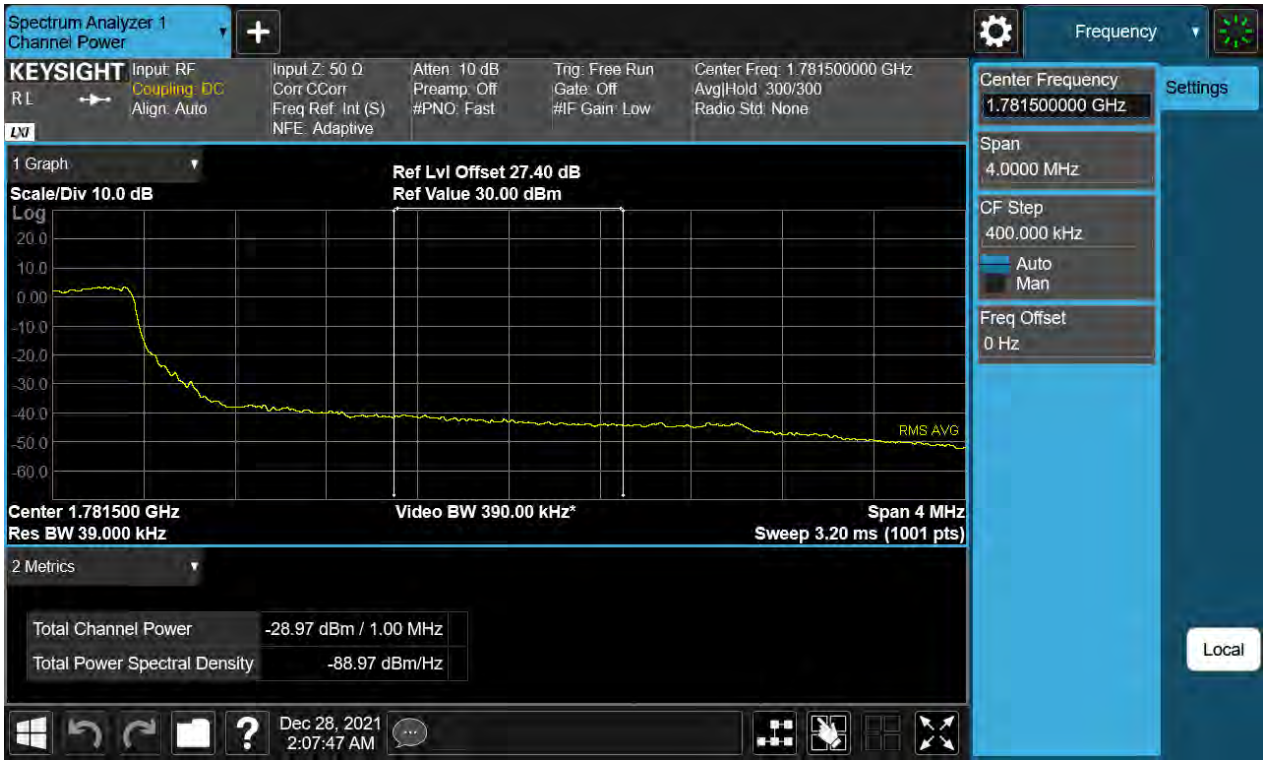
BW3 M_BandEdge_Lowest Channel_QPSK_FullRB (1) (Sub2 Ant)

BW3 M_BandEdge_Lowest Channel_QPSK_FullRB (2) (Sub2 Ant)

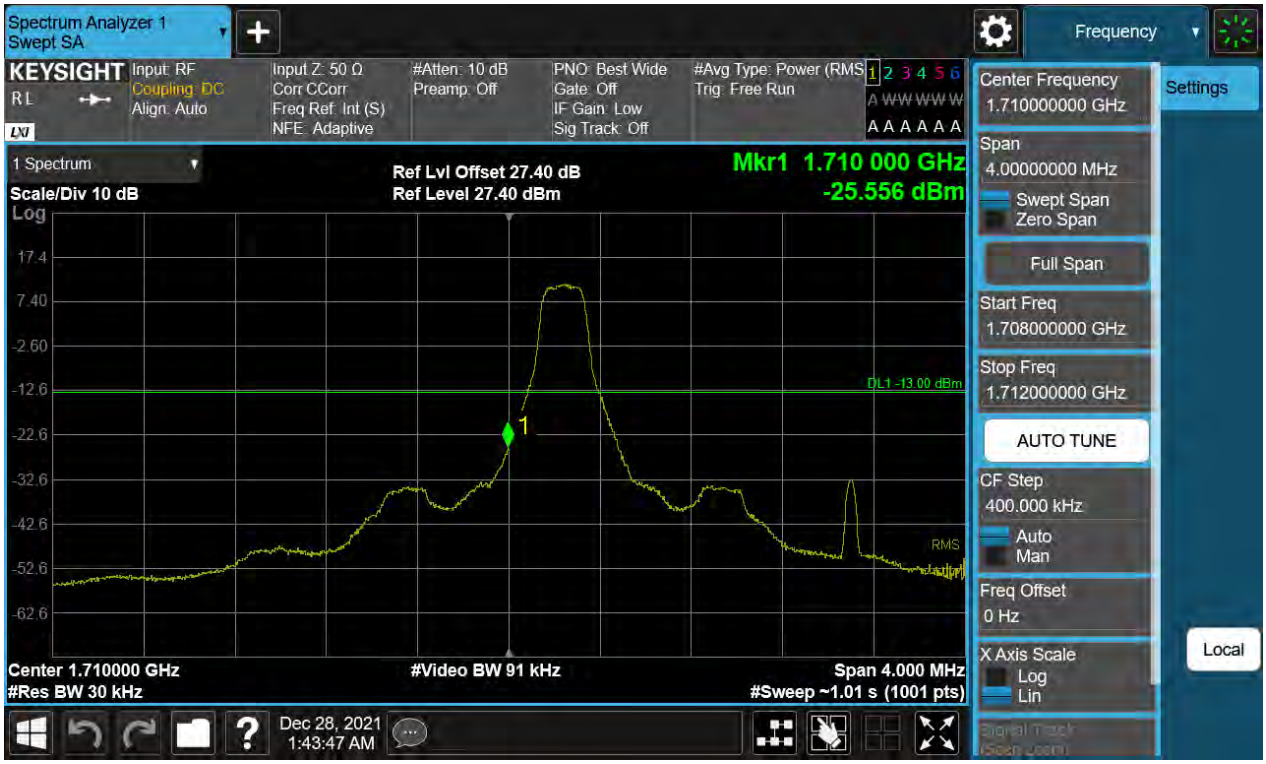


BW3 M_BandEdge_Highest Channel_QPSK_FullRB (1) (Sub2 Ant)

BW3 M_BandEdge_Highest Channel_QPSK_FullRB (2) (Sub2 Ant)



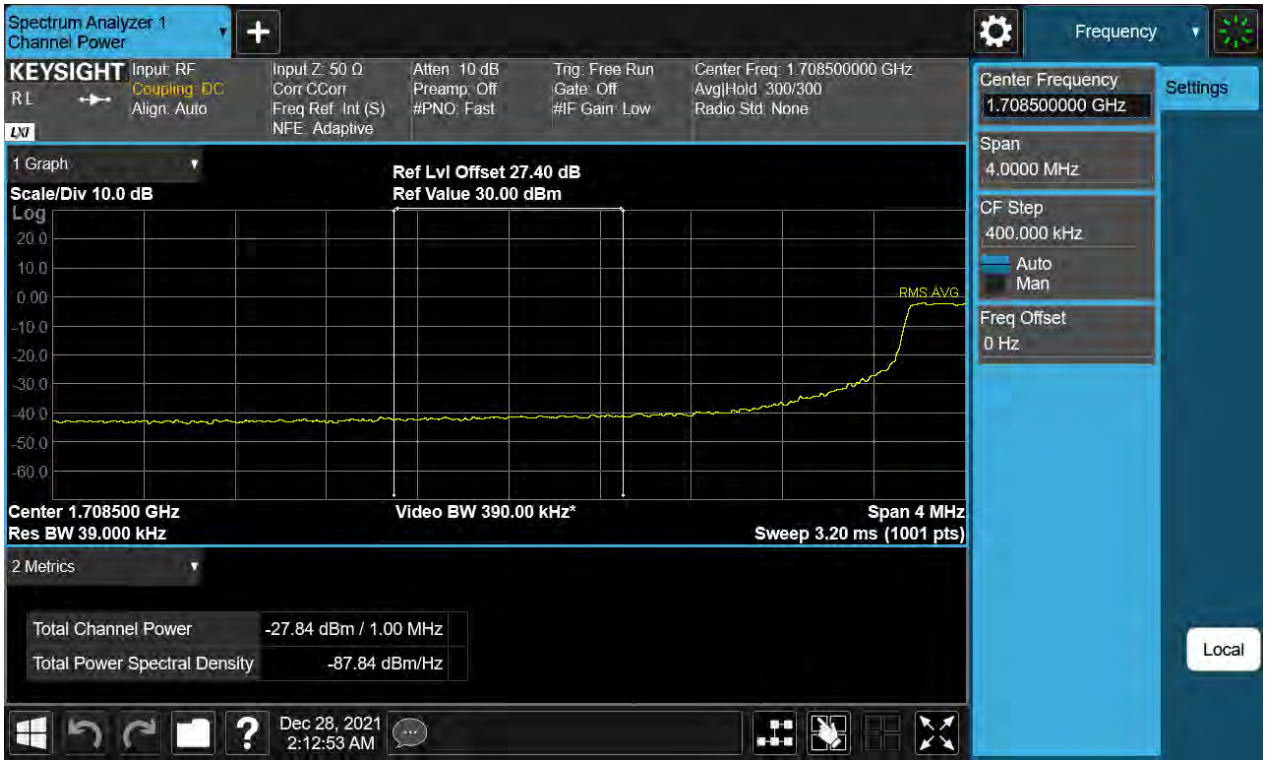
BW3 M_BandEdge_Lowest Channel_QPSK_1RB (Sub2 Ant)



BW3 M_BandEdge_Highest Channel_QPSK_1RB (Sub2 Ant)

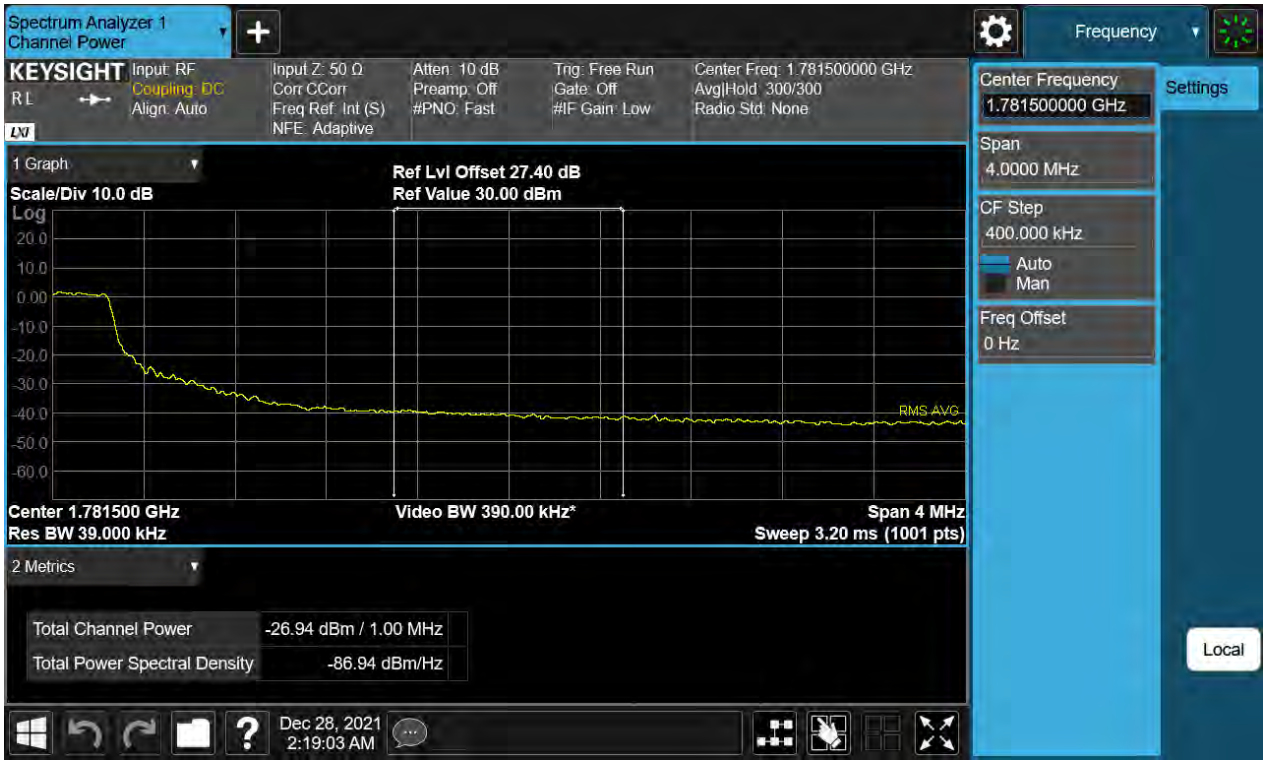
BW5 M_BandEdge_Lowest Channel_QPSK_FullRB (1) (Sub2 Ant)

BW5 M_BandEdge_Lowest Channel_QPSK_FullRB (2) (Sub2 Ant)

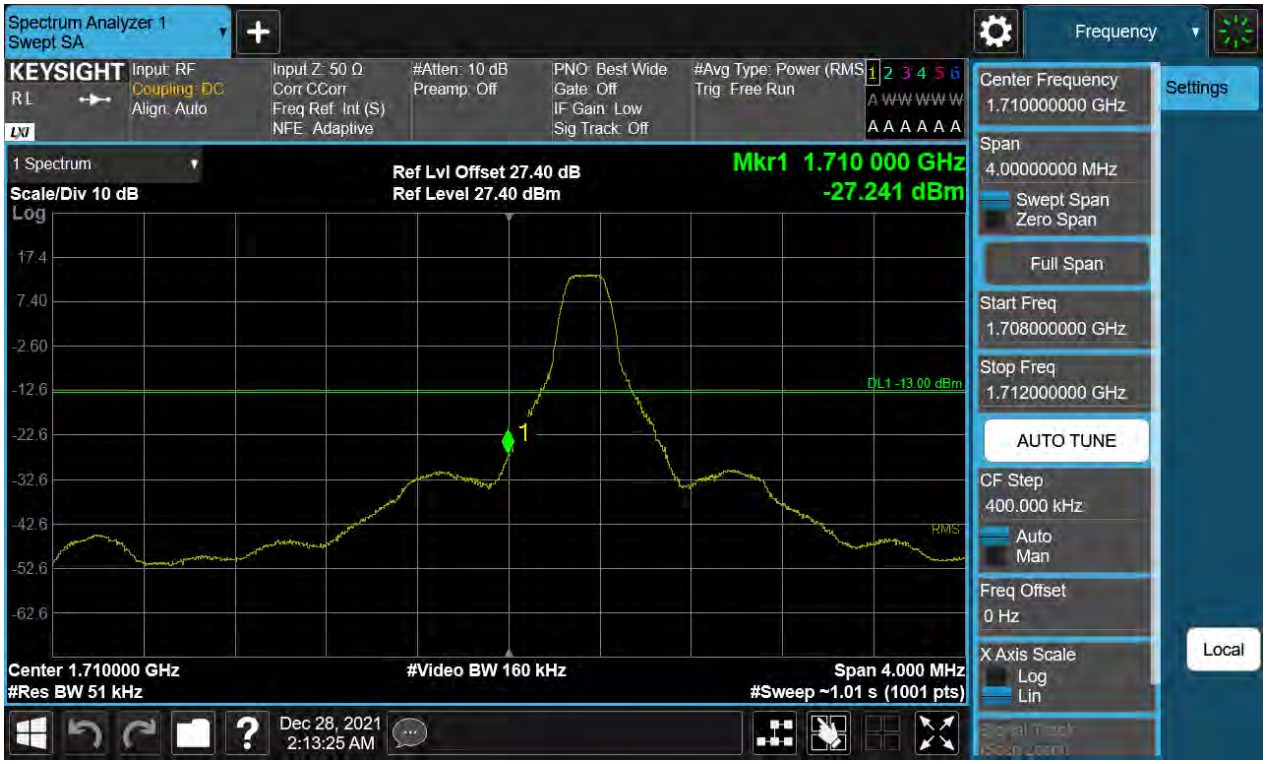


BW5 M_BandEdge_Highest Channel_QPSK_FullRB (1) (Sub2 Ant)

BW5 M_BandEdge_Highest Channel_QPSK_FullRB (2) (Sub2 Ant)



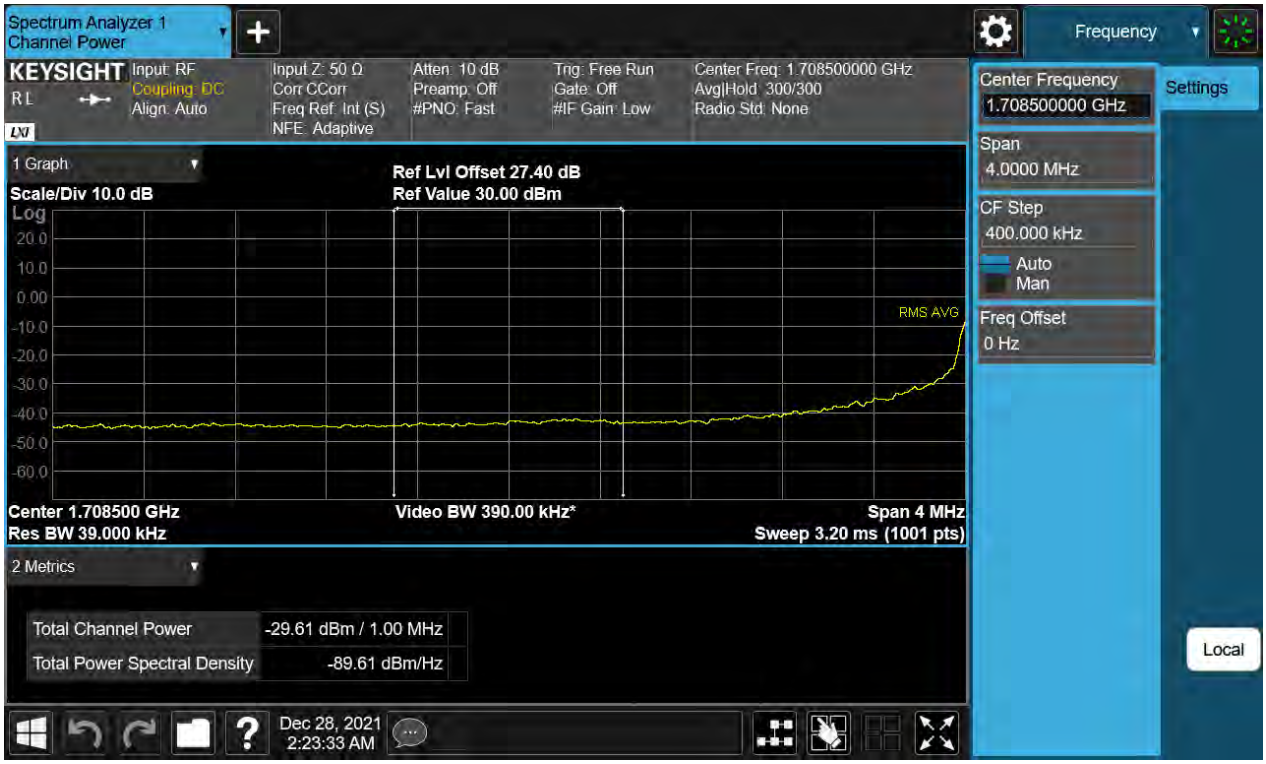
BW5 M_BandEdge_Lowest Channel_QPSK_1RB (Sub2 Ant)



BW5 M_BandEdge_Highest Channel_QPSK_1RB (Sub2 Ant)

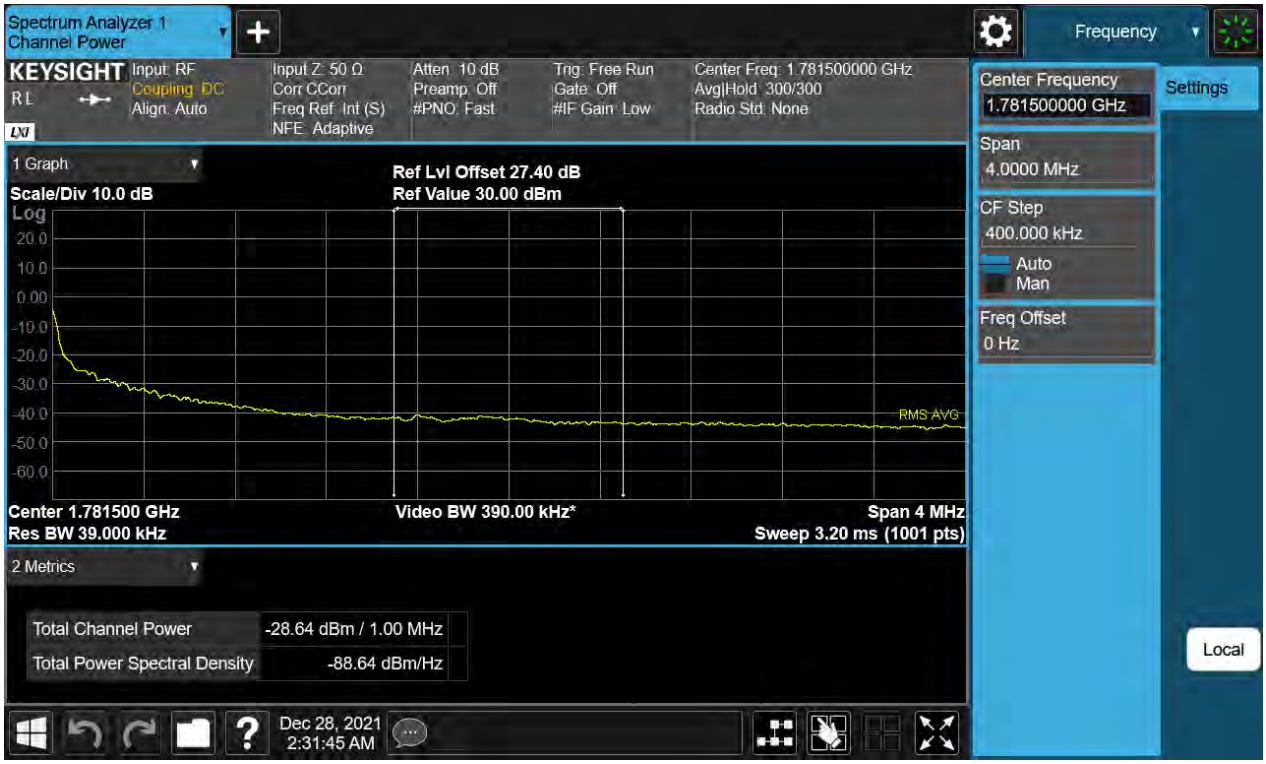
BW10 M_BandEdge_Lowest Channel_QPSK_FullRB (1) (Sub2 Ant)

BW10 M_BandEdge_Lowest Channel_QPSK_FullRB (2) (Sub2 Ant)



BW10 M_BandEdge_Highest Channel_QPSK_FullRB (1) (Sub2 Ant)

BW10 M_BandEdge_Highest Channel_QPSK_FullRB (2) (Sub2 Ant)

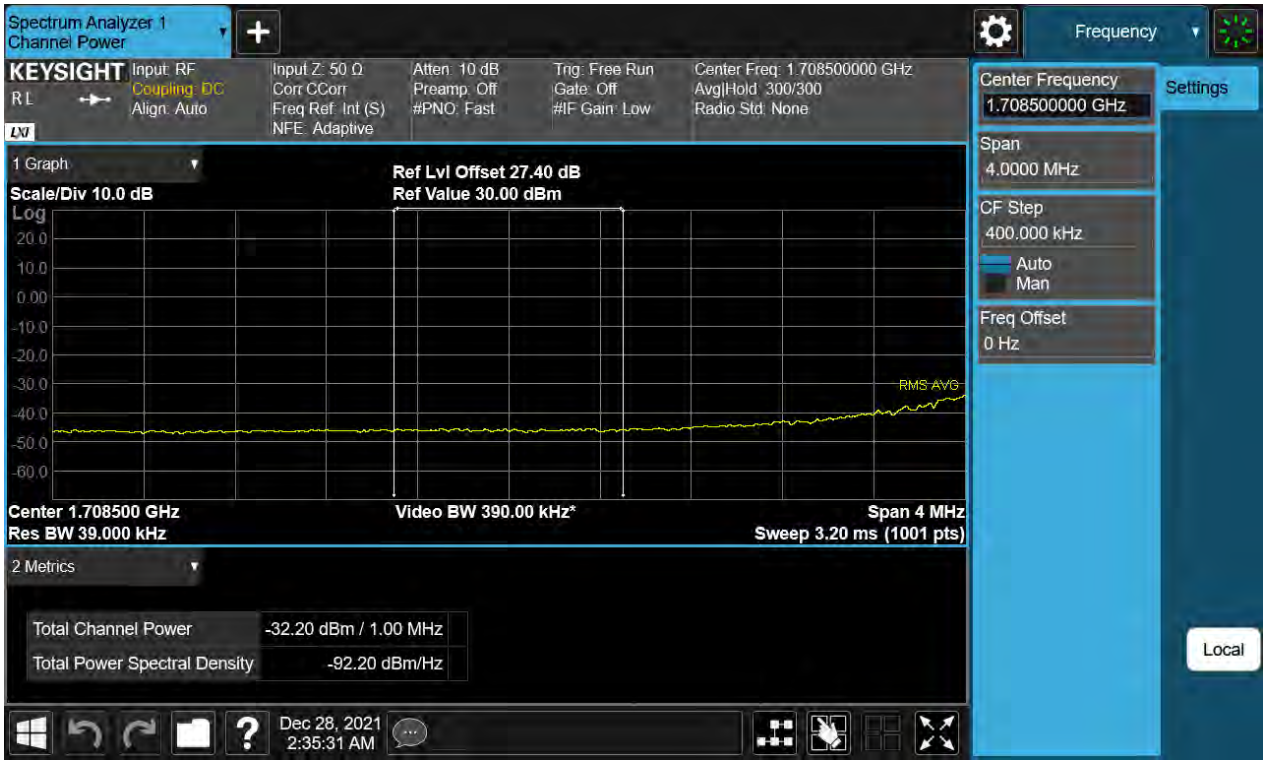


BW10 M_BandEdge_Lowest Channel_QPSK_1RB (Sub2 Ant)

BW10 M_BandEdge_Highest Channel_QPSK_1RB (Sub2 Ant)

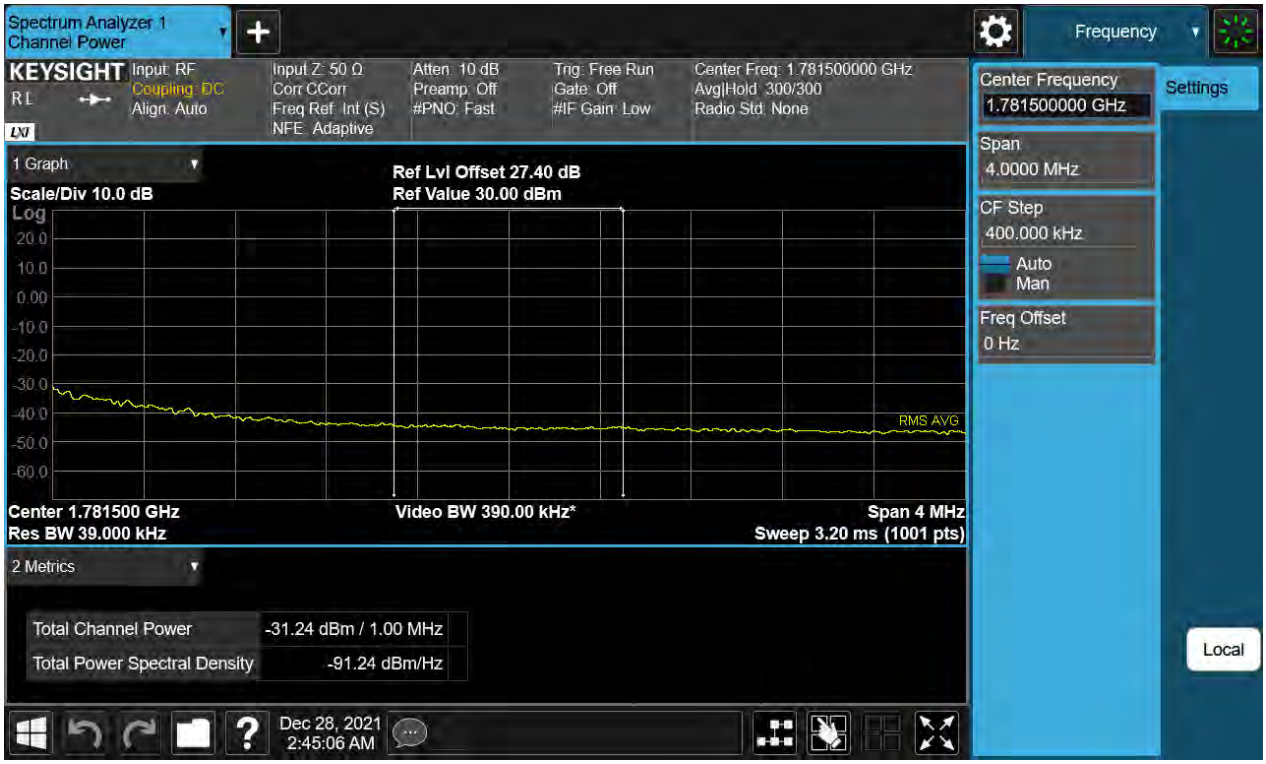
BW15 M_BandEdge_Lowest Channel_QPSK_FullRB (1) (Sub2 Ant)

BW15 M_BandEdge_Lowest Channel_QPSK_FullRB (2) (Sub2 Ant)



BW15 M_BandEdge_Highest Channel_QPSK_FullRB (1) (Sub2 Ant)

BW15 M_BandEdge_Highest Channel_QPSK_FullRB (2) (Sub2 Ant)



BW15 M_BandEdge_Lowest Channel_QPSK_1RB (Sub2 Ant)

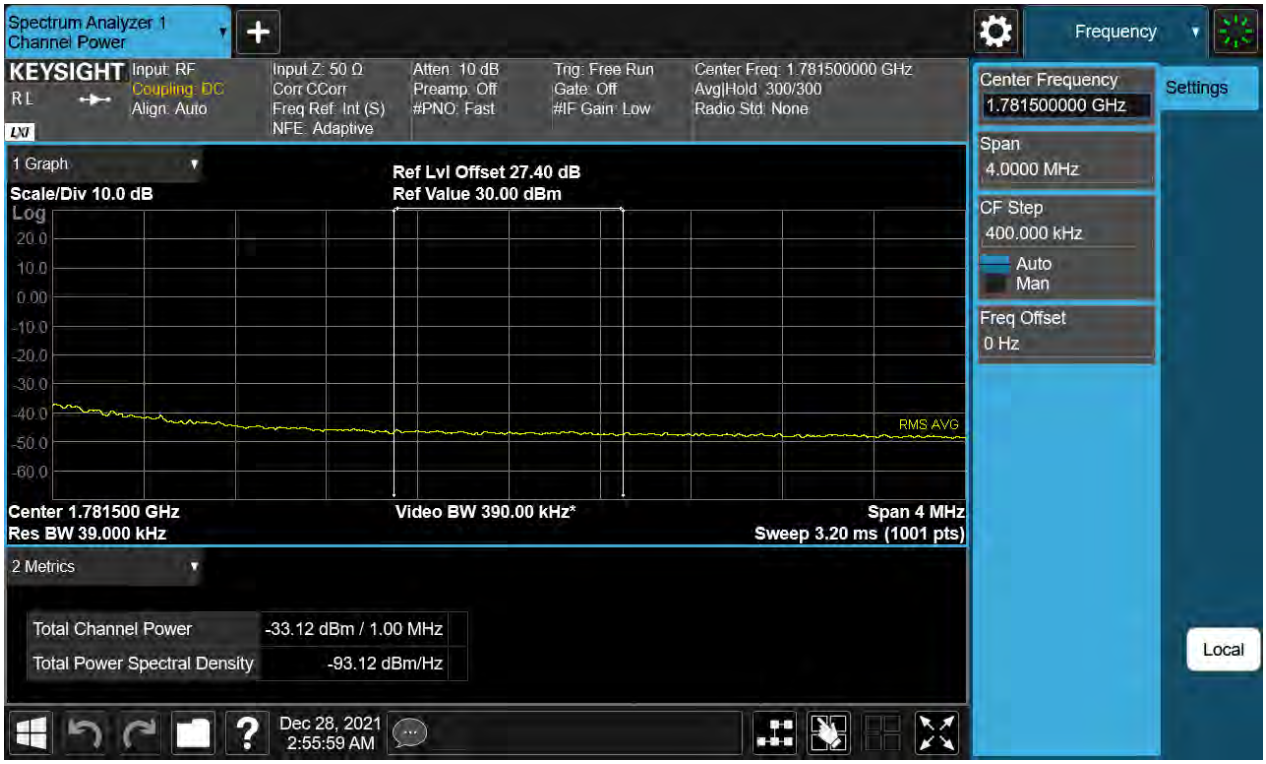
BW15 M_BandEdge_Highest Channel_QPSK_1RB (Sub2 Ant)

BW20 M_BandEdge_Lowest Channel_QPSK_FullRB (1) (Sub2 Ant)

BW20 M_BandEdge_Lowest Channel_QPSK_FullRB (2) (Sub2 Ant)

BW20 M_BandEdge_Highest Channel_QPSK_FullRB (1) (Sub2 Ant)

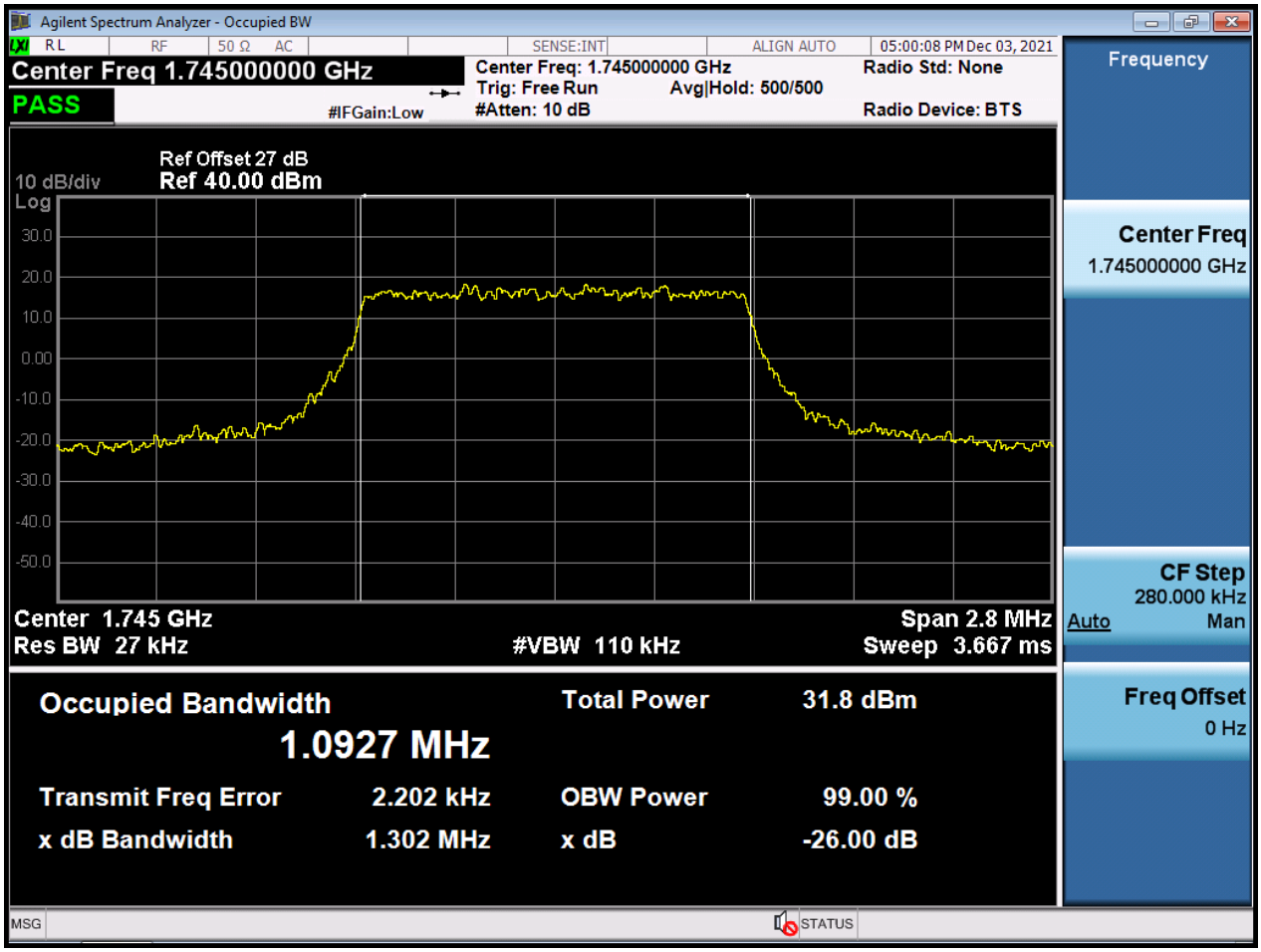
BW20 M_BandEdge_Highest Channel_QPSK_FullRB (2) (Sub2 Ant)



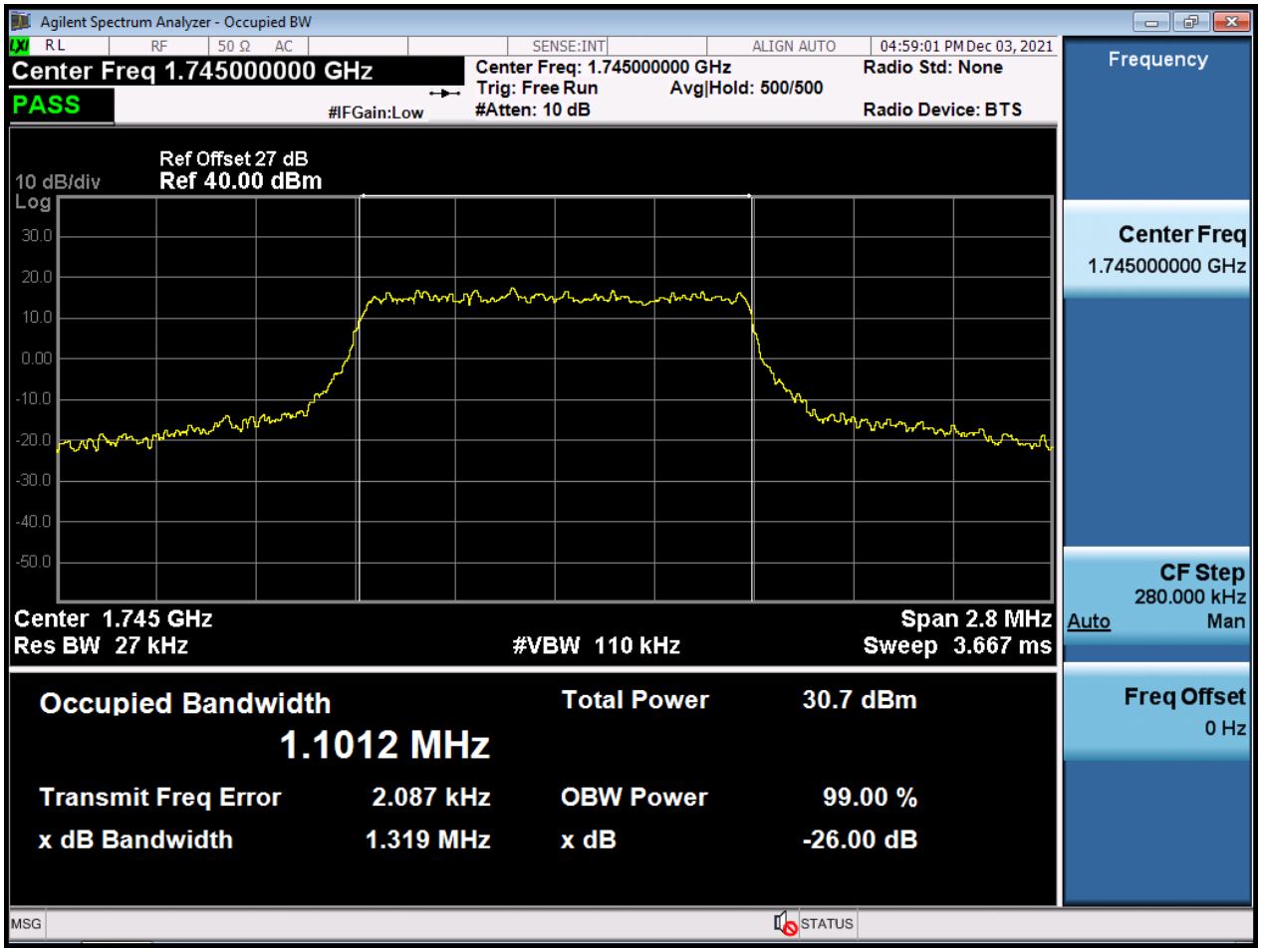
BW20 M_BandEdge_Lowest Channel_QPSK_1RB (Sub2 Ant)

BW20 M_BandEdge_Highest Channel_QPSK_1RB (Sub2 Ant)

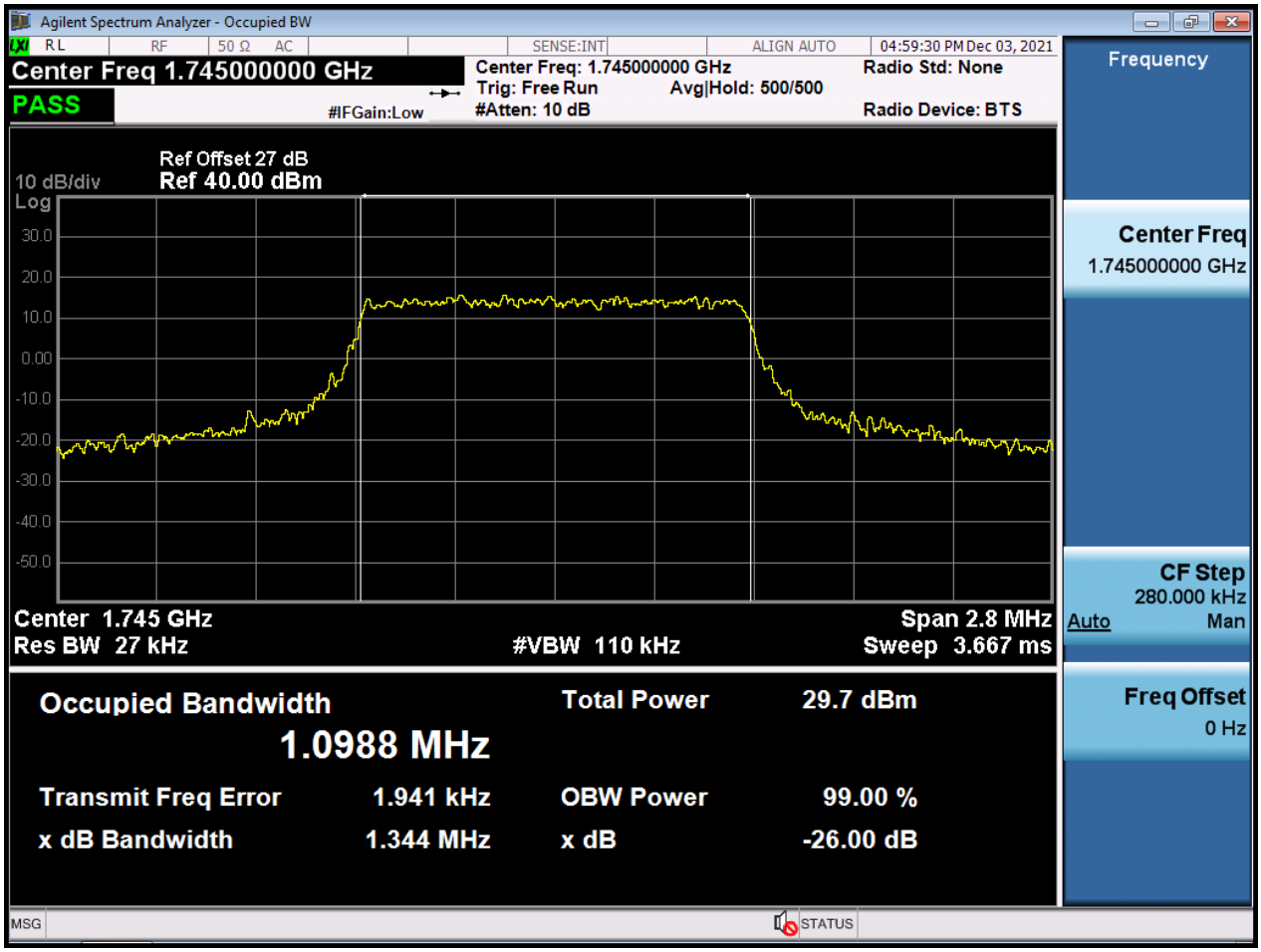
BW1.4 M_OBW_Middle Channel_QPSK_FullRB (Main1 Ant)



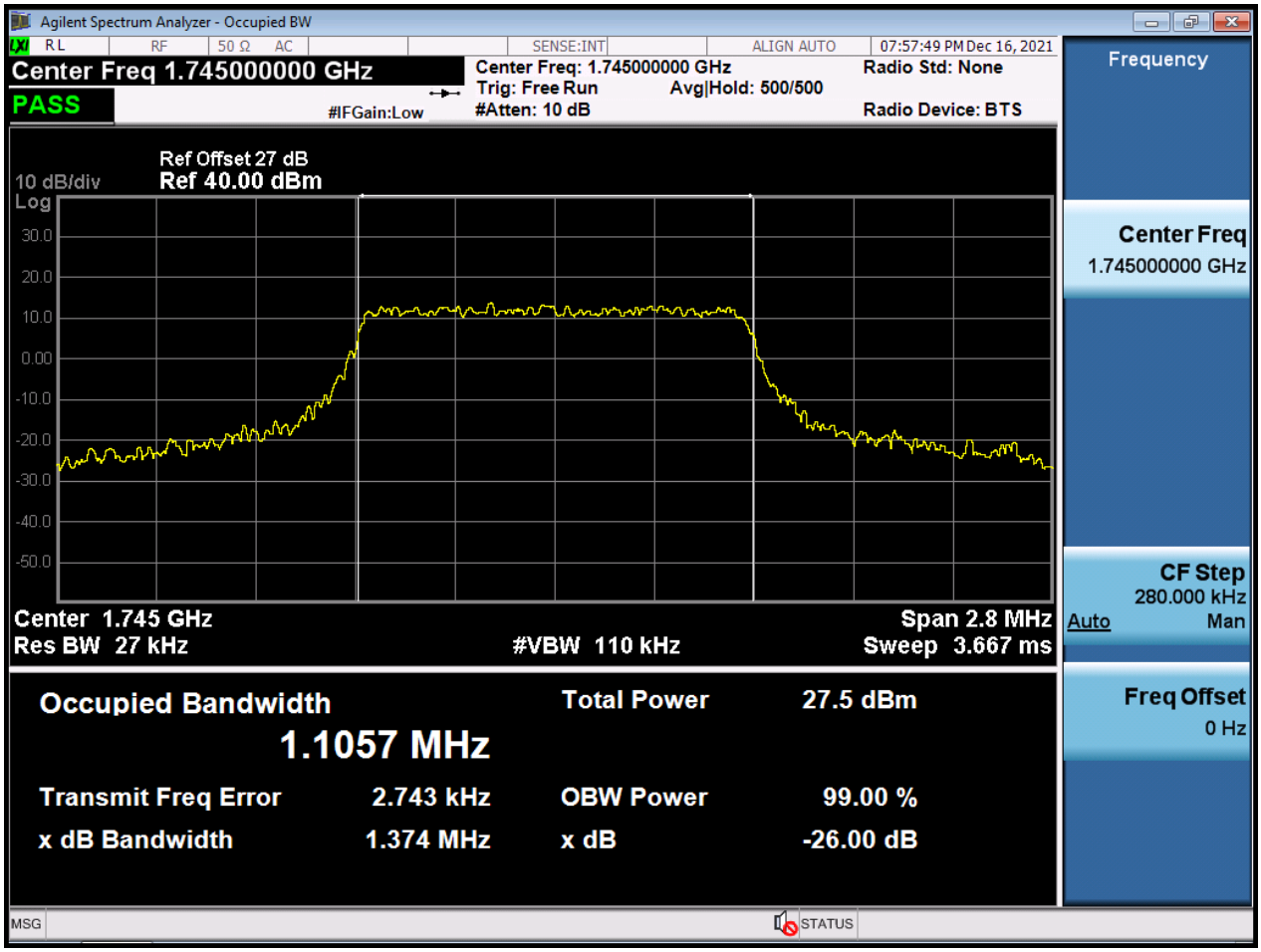
BW1.4 M_OBW_Middle Channel_16QAM_FullRB (Main1 Ant)



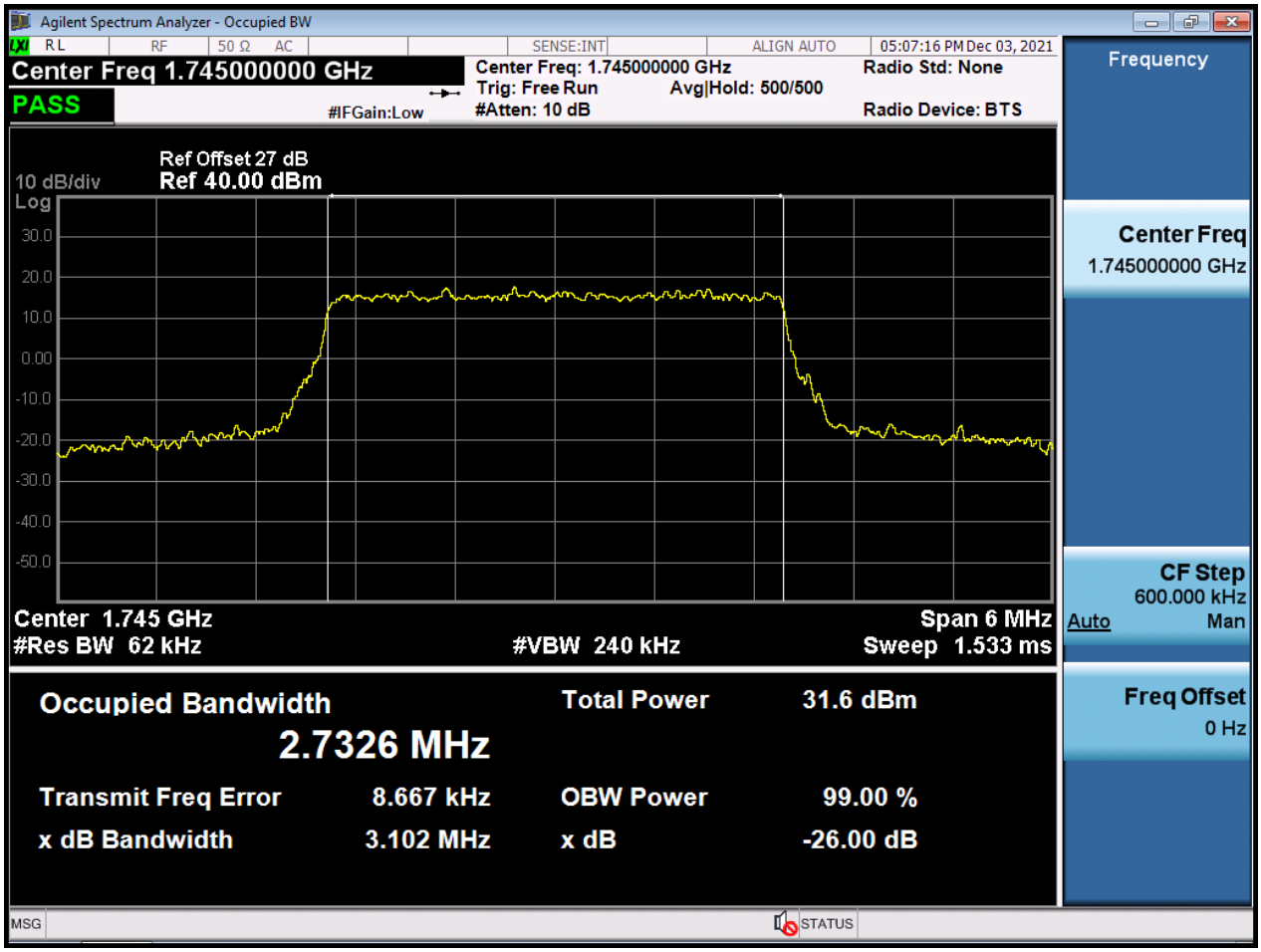
BW1.4 M_OBW_Middle Channel_64QAM_FullRB (Main1 Ant)



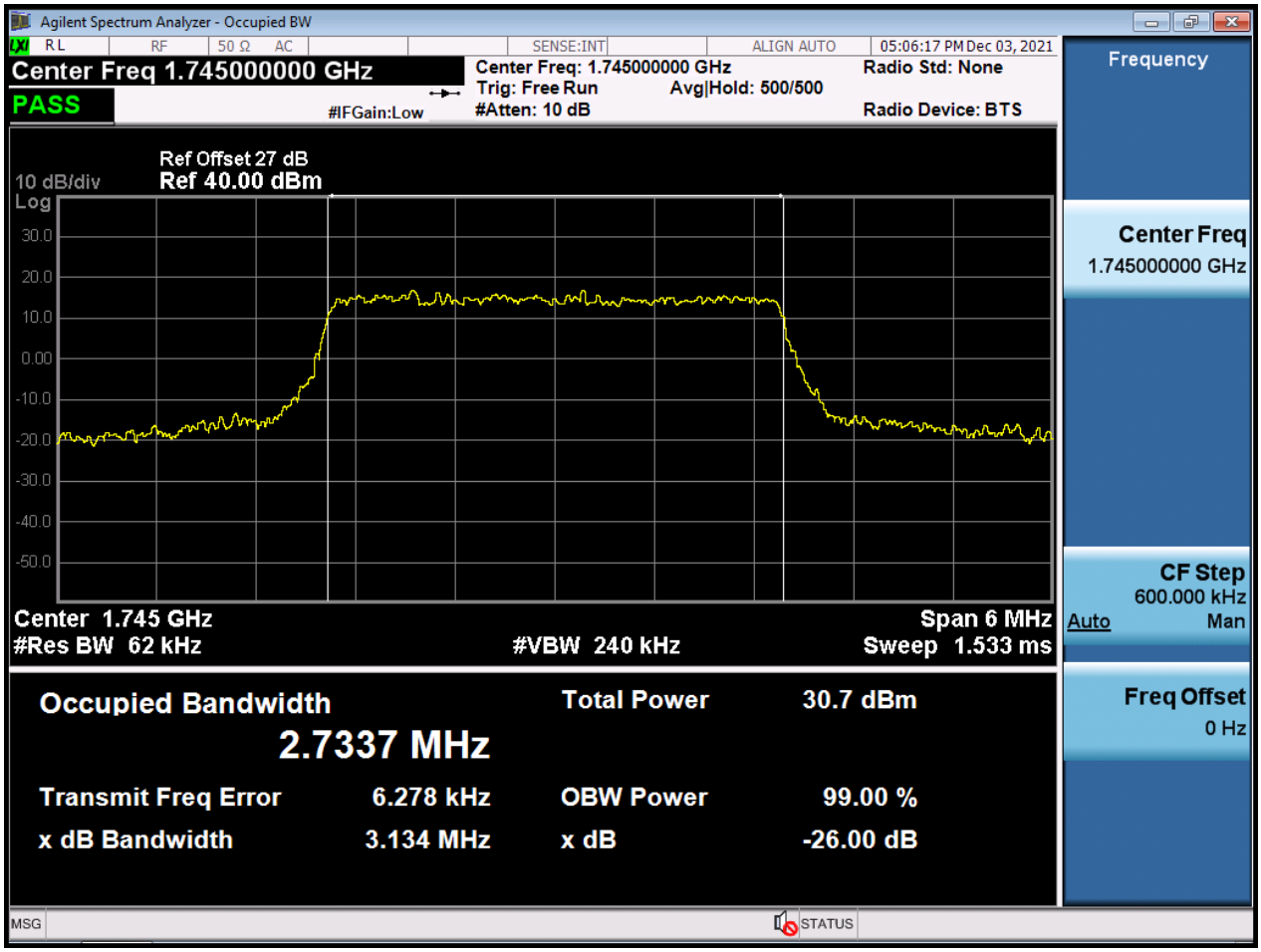
BW1.4 M_OBW_Middle Channel_256QAM_FullRB (Main1 Ant)



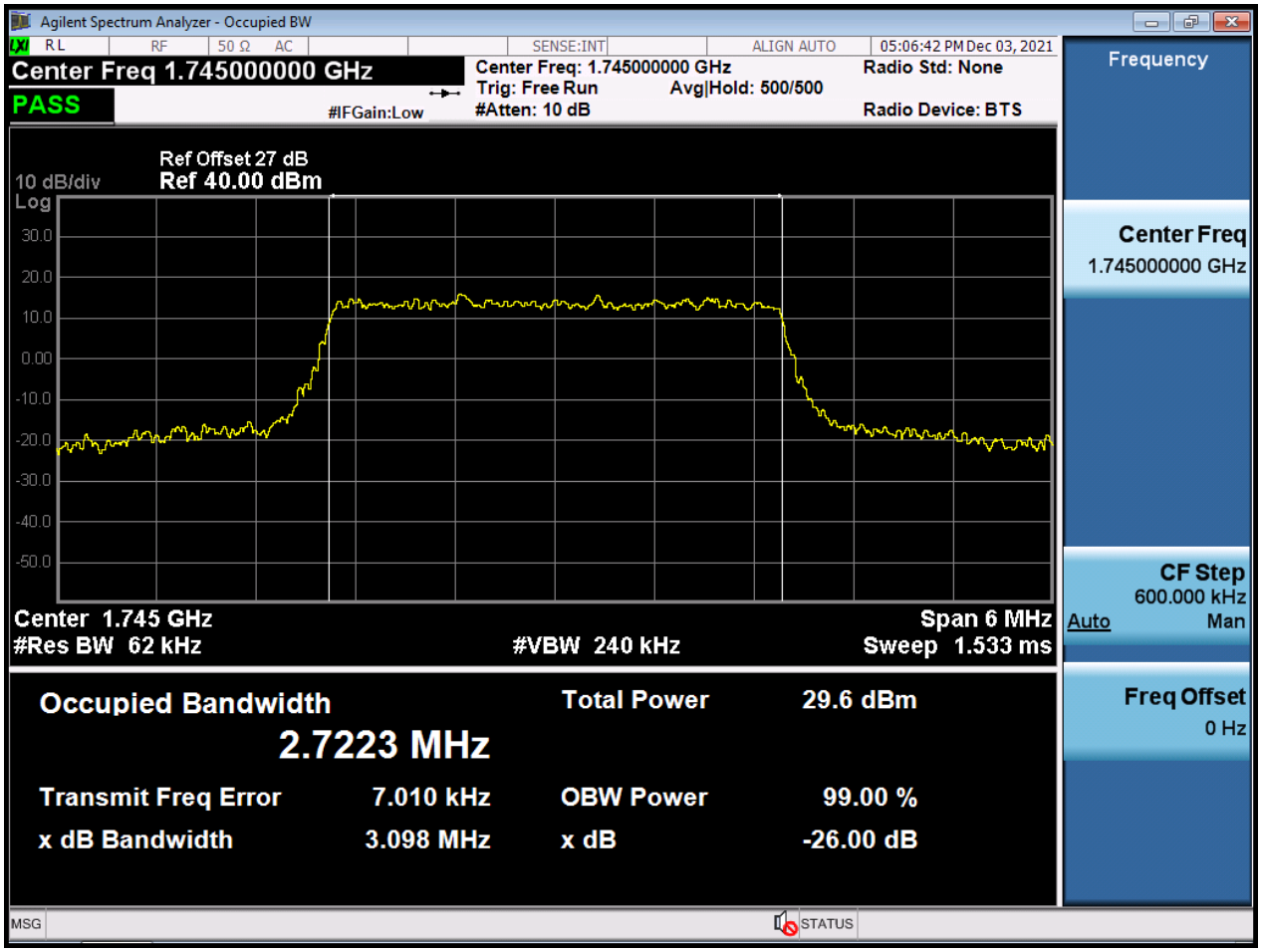
BW3 M_OBW_Middle Channel_QPSK_FullRB (Main1 Ant)



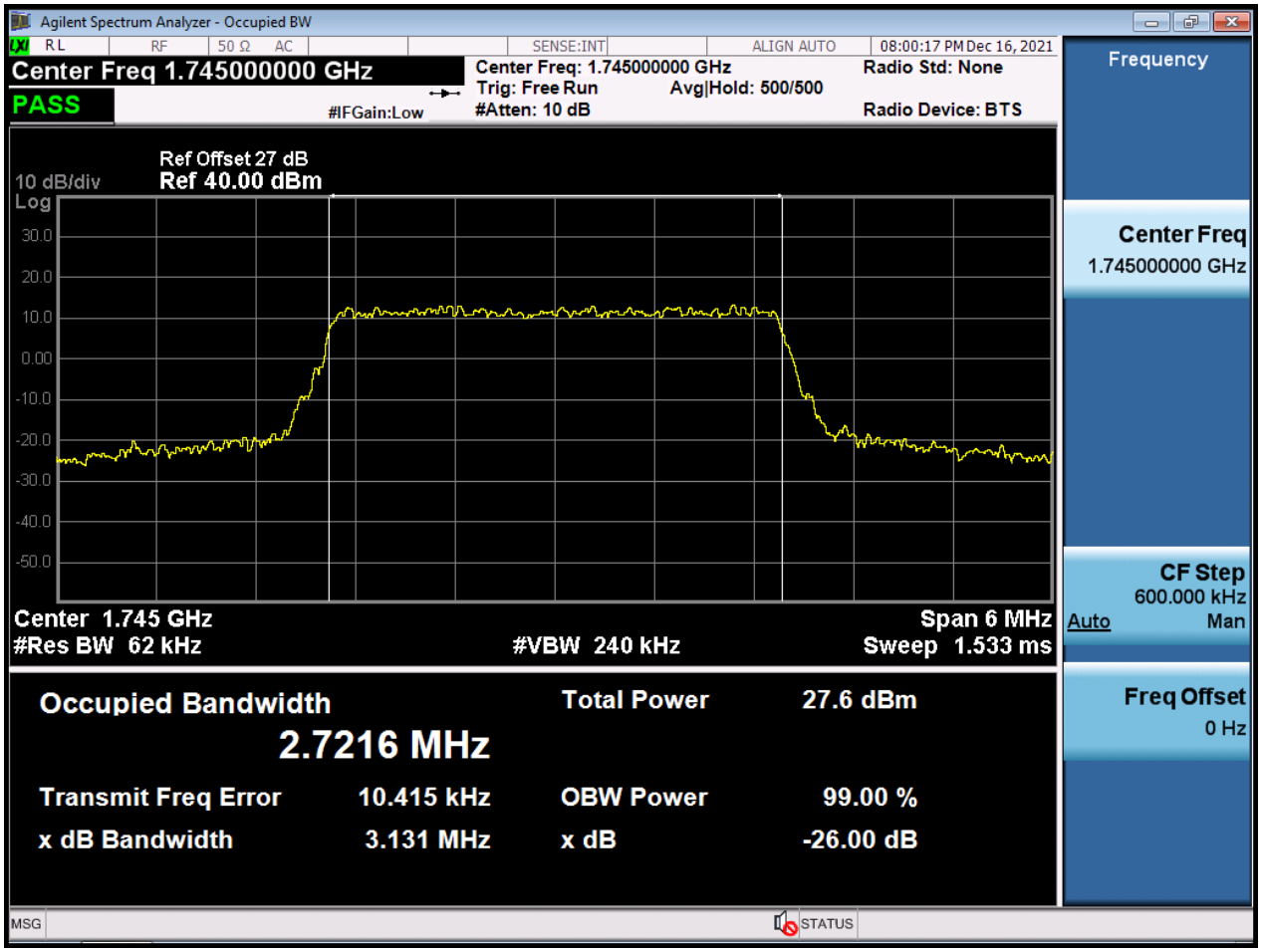
BW3 M_OBW_Middle Channel_16QAM_FullRB (Main1 Ant)



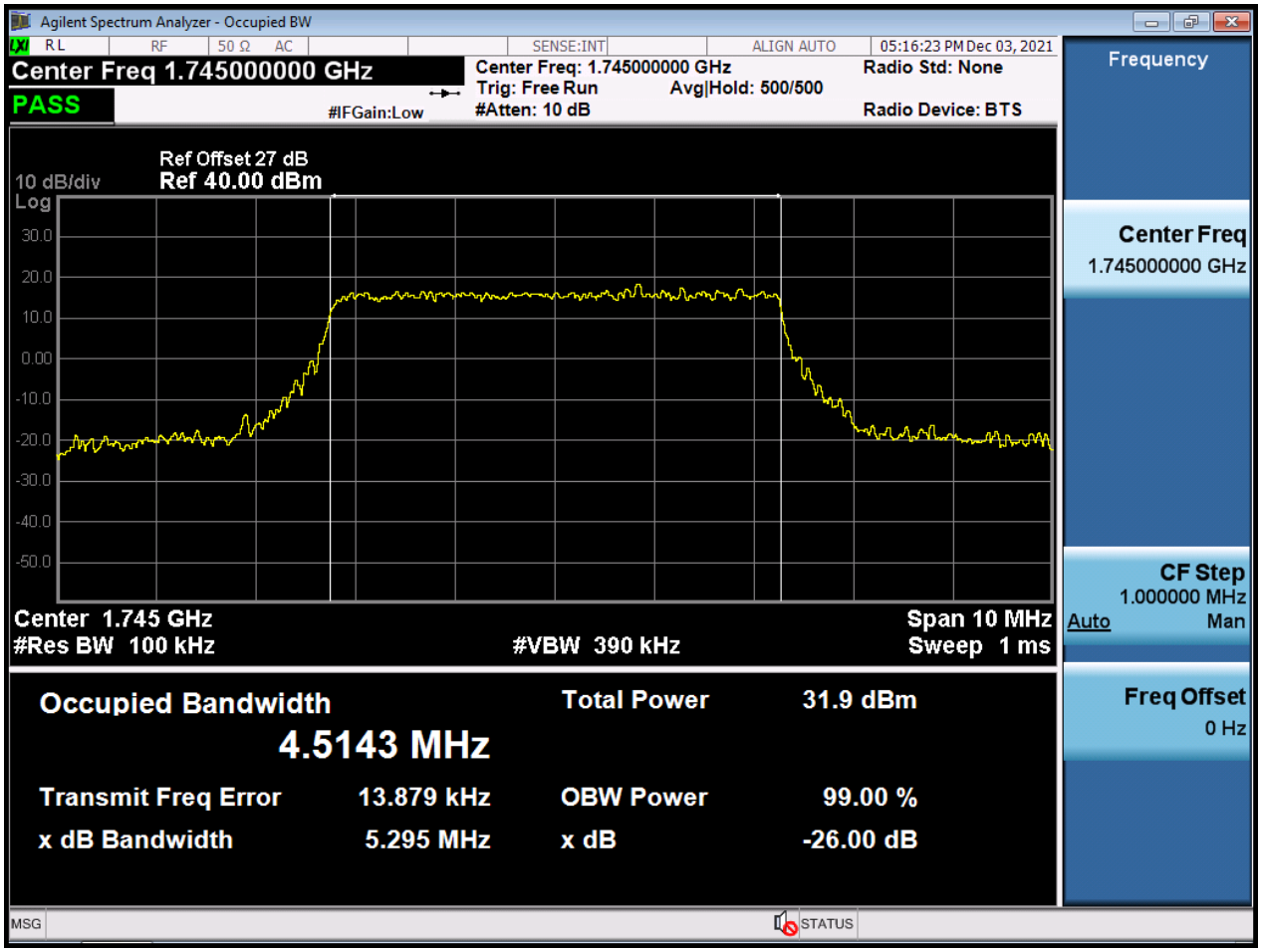
BW3 M_OBW_Middle Channel_64QAM_FullRB (Main1 Ant)



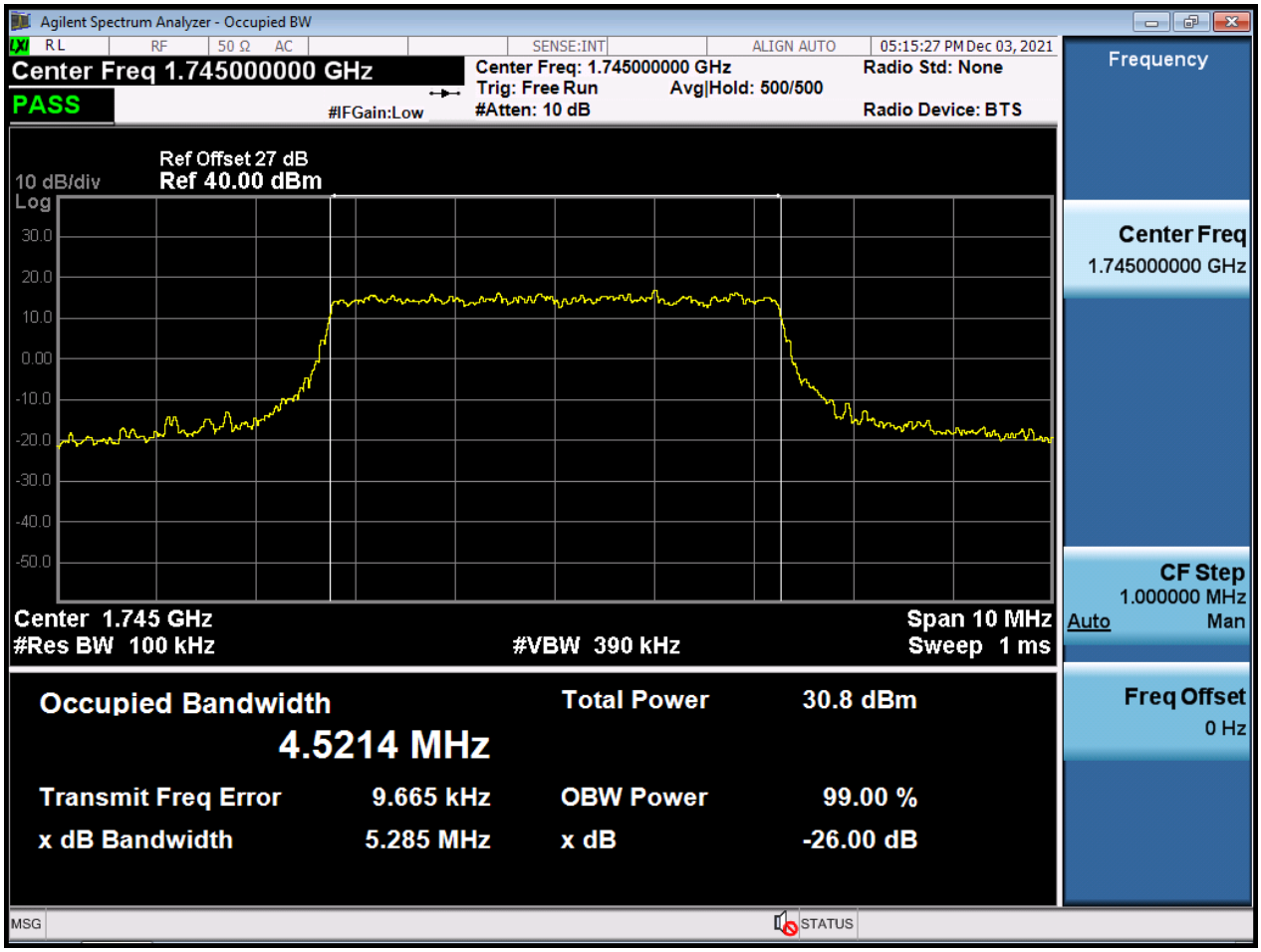
BW3 M_OBW_Middle Channel_256QAM_FullRB (Main1 Ant)



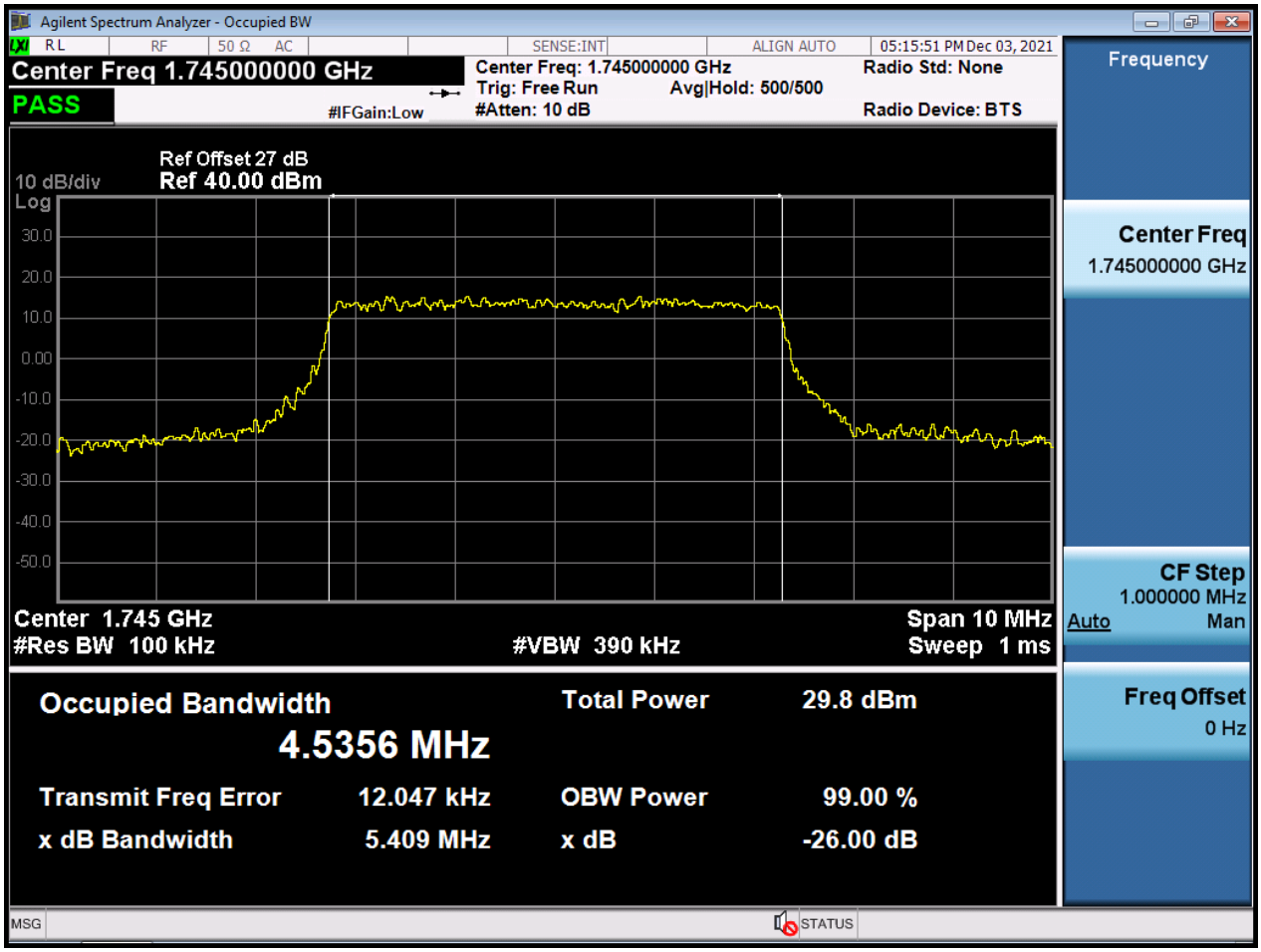
BW5 M_OBW_Middle Channel_QPSK_FullRB (Main1 Ant)



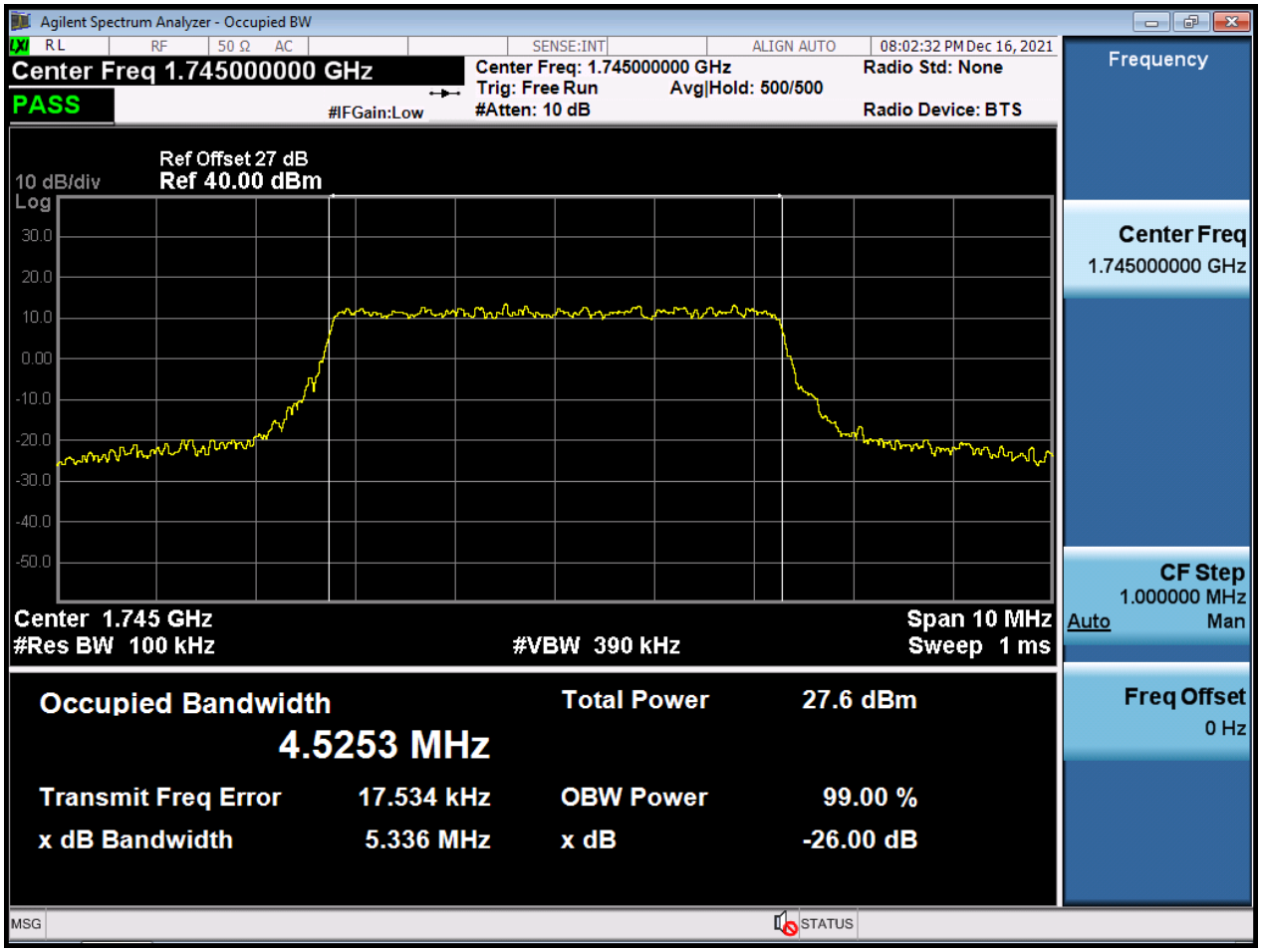
BW5 M_OBW_Middle Channel_16QAM_FullRB (Main1 Ant)



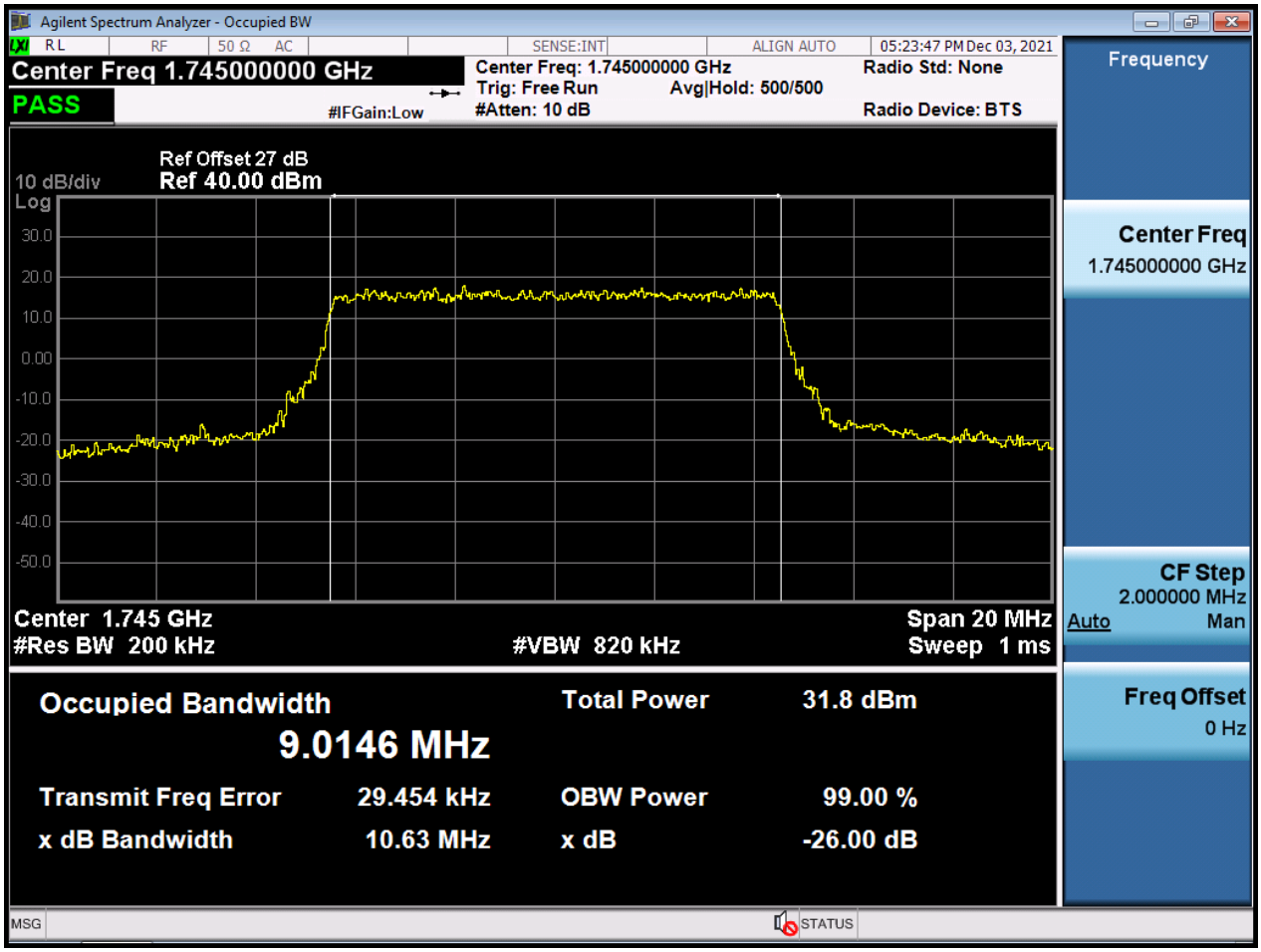
BW5 M_OBW_Middle Channel_64QAM_FullRB (Main1 Ant)



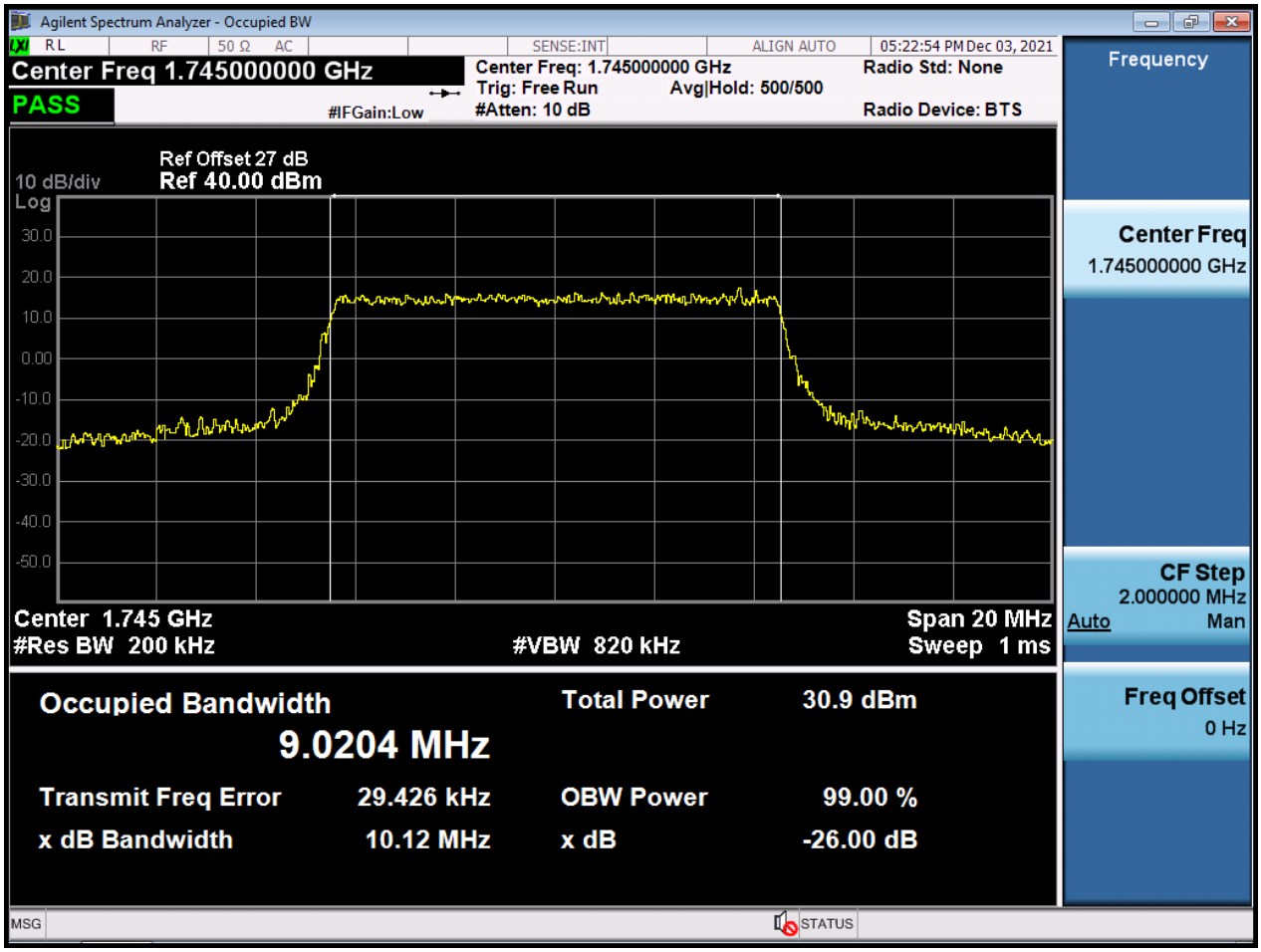
BW5 M_OBW_Middle Channel_256QAM_FullRB (Main1 Ant)



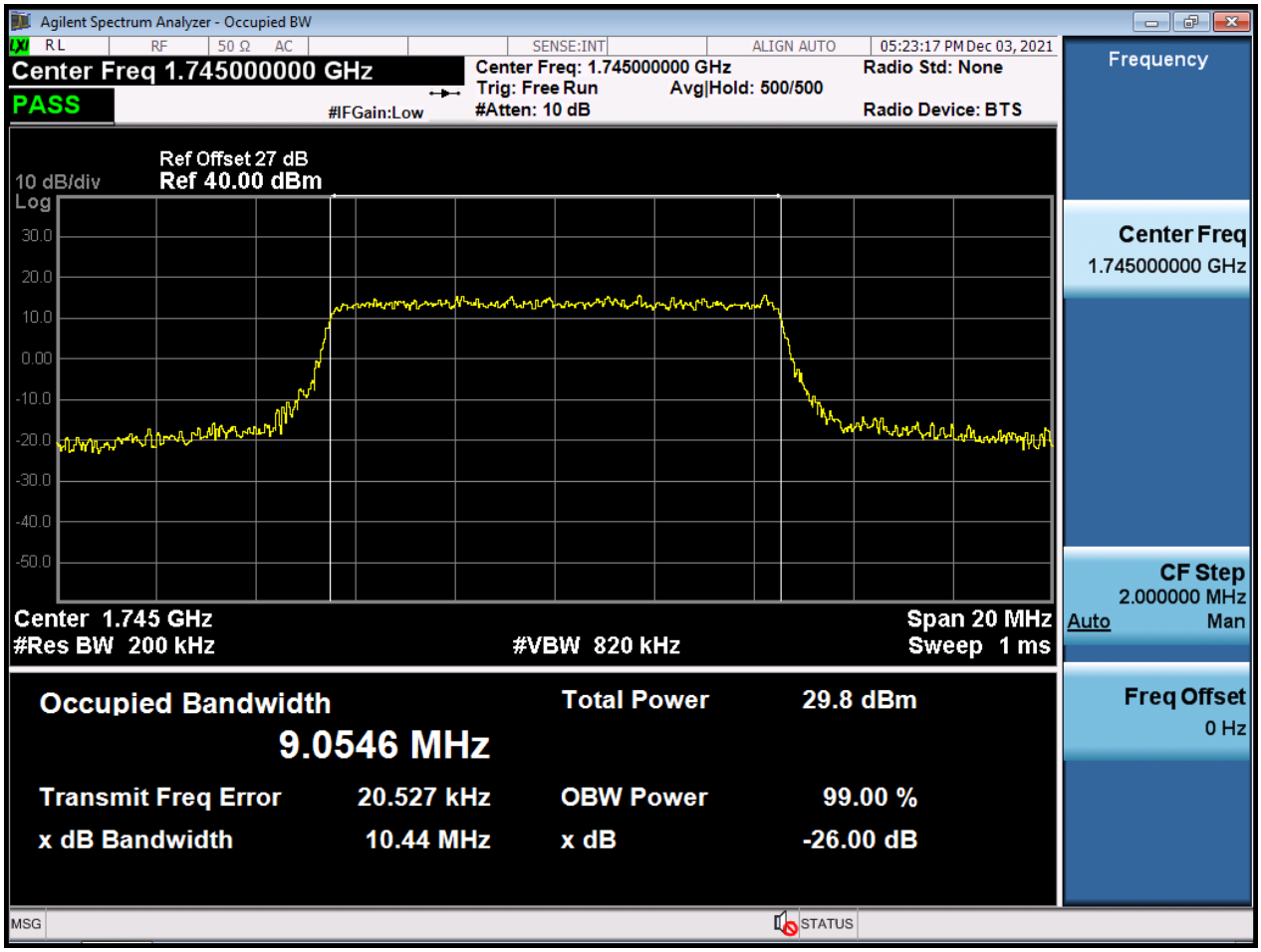
BW10 M_OBW_Middle Channel_QPSK_FullRB (Main1 Ant)



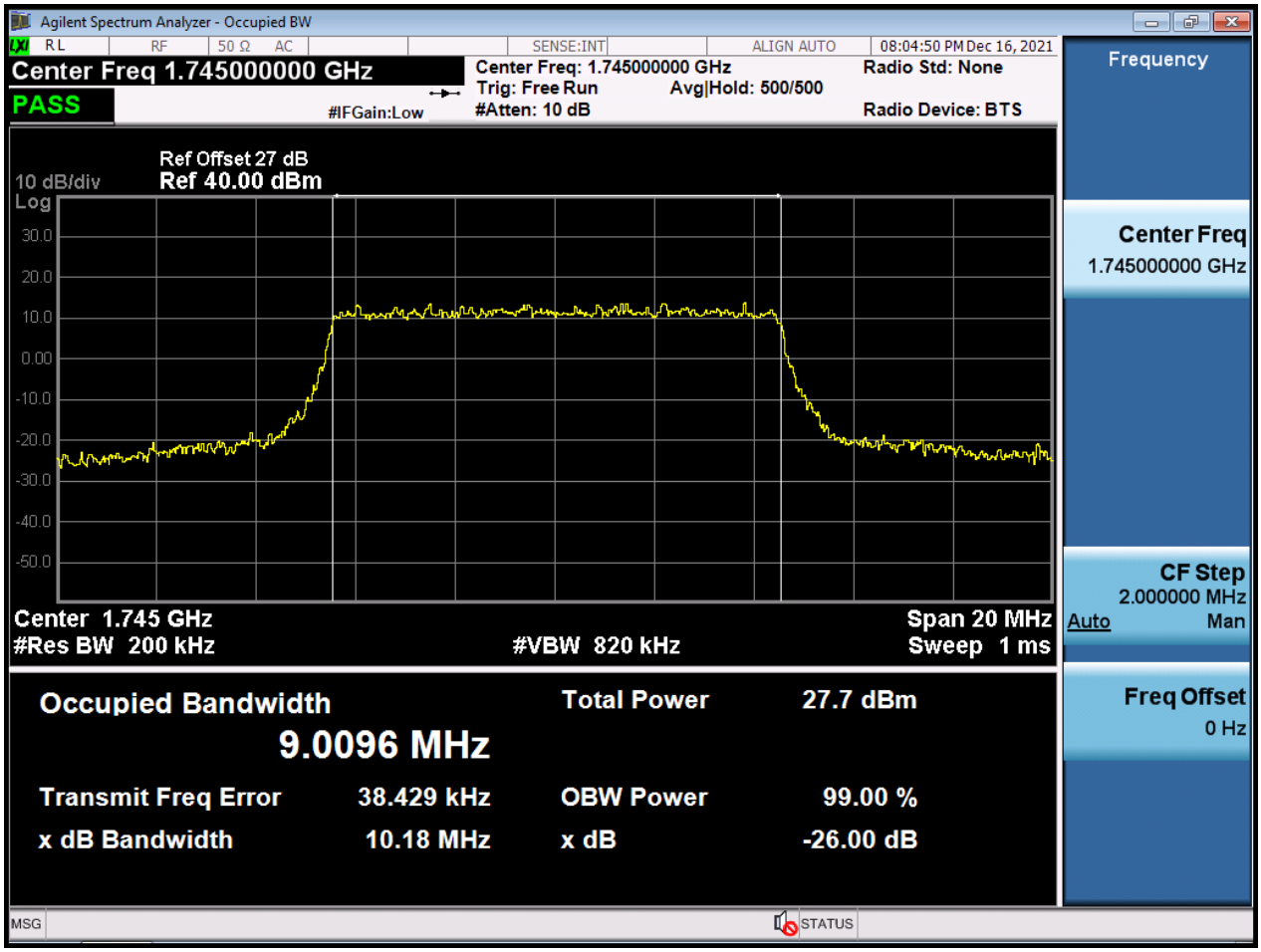
BW10 M_OBW_Middle Channel_16QAM_FullRB (Main1 Ant)



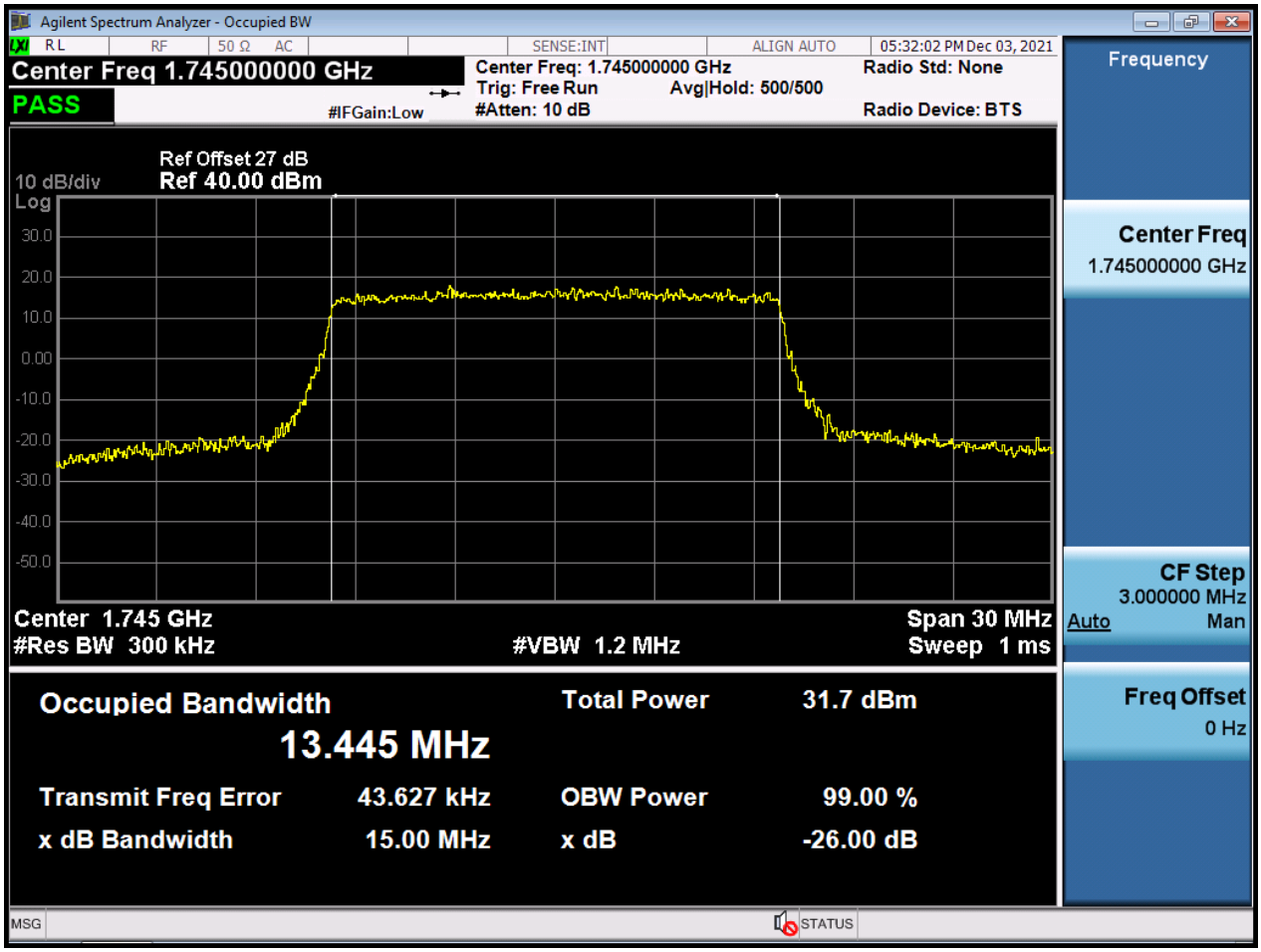
BW10 M_OBW_Middle Channel_64QAM_FullRB (Main1 Ant)



BW10 M_OBW_Middle Channel_256QAM_FullRB (Main1 Ant)



BW15 M_OBW_Middle Channel_QPSK_FullRB (Main1 Ant)



BW15 M_OBW_Middle Channel_16QAM_FullRB (Main1 Ant)